FEEDSTUFFS

The Weekly Newspaper for the Feed Industry

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FEEDSTUFFS *Features This Week*

SWINE OPERATION—An Illinois feed dealer, involved in swine operations in a major way, explains his present and future plans. **Page 18.**

PELLETING PLANT—An Oregon installation designed to turn out any type of pelleted livestock feed is described on **page 26.**

ANIMAL FATS—California feeders tell their experiences with the addition of fats to beef cattle feed on **page 30.**

NUTRITION CONGRESS—A Maryland scientist reviews selected papers presented at the fifth International Congress on Nutrition. **Page 38.**

INTEGRATED OPERATIONS—A trend toward more feed milling among integrated meat bird operations was noted in three states. **Page 70.**

FATS—College scientists discuss the use of the increased supply of inedible fats in this country on **page 86.**

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FDA Invites Trade to Consult on Regulations

By JOHN CIPPERLY
Feedstuffs Washington Correspondent

WASHINGTON — The Food and Drug Administration has the welcome mat out—it will welcome further consultations with feed industry representatives regarding implementation of federal controls which are mandatory under the existing law.

It seems particularly appropriate to point this out now, as the tempo of enforcement of legislative acts by administrative agencies is stepped up.

It can be important for industry to work with the federal government in making regulations effective and at the same time not destructive to the economic structure of the industry.

George P. Larrick, Food and Drug Administration commissioner, has told this reporter that he would welcome any initiative on the part of a responsible body of the feed industry to meet with him to discuss the formation of a consultative group to assist government officials in implementing controls.

It may be noted that the American Feed Manufacturers Assn. is aware of this, and W. E. Glennon, AFMA president, has indicated that the Larrick invitation for a meeting of the feed industry and government officials, primarily for consideration of "ground rules," will be accepted in good faith.

Broader Controls

In connection with this, it is important for the feed industry to recognize that the government has gone down the line in various regulatory agencies, not just FDA, in effecting broader controls, and it is felt that these agencies have no latitude of exemption. For the feed industry, the problem now is to try to help in seeing that the FDA actions are within reasonable channels.

So far as FDA is concerned, the welcome mat is out to the feed industry now as the agency contemplates further enforcement in connection with use of various drugs and pesticidal chemicals which may be in feeds and which can appear in the end products of animal production.

This reporter can state there is a genuine invitation to industry to go to FDA with a primary committee, from which may be developed a broader group that can assist FDA in formulation and direction of controls over use of drugs and pesticidal chemicals.

The FDA expression of an "open door" outlook is not new in industry generally. As Mr. Larrick has noted, there have for as long as 30 years been industry committees which have

(Turn to DRUGS, page 7)

Feed Business Marches Forward On High Demand

U.S. formula feed business marched forward this week.

Commands for this advance came from such sergeants as colder weather; continuation of favorable prices for hogs, eggs and milk, and fairly steady feed prices.

Feeders were moving into the market for dairy and cattle feeds, but the big season for beef feeds really hasn't arrived yet. Bookings are picking up at a good rate, but calls for delivery to feeders will be held off until further drops in temperature.

Egg prices, 30-40% higher than a year ago, have sparked poultry feed business. Broiler prices are dragging, however.

Chicago hog prices continued their

(Turn to BUSINESS, page 105)

J. E. Sams, President Of Blatchford, Dies

WAUKEGAN, ILL.—J. E. (Jack) Sams, 63, president of Blatchford Calf Meal Co., died unexpectedly Oct. 6. Mr. Sams became ill and was taken to the hospital, where he died. He is believed to have suffered a heart attack, although the exact cause of his death was not immediately determined.

Mr. Sams, who was widely known in the feed industry, had been active in the management of Blatchford for 30 years, serving most of this time as vice president and sales manager. He was named president in January of this year.

Mr. Sams was born May 31, 1895, in Newark, Ohio, and was graduated from Ohio State University in 1921.

He was past president of the Chamber of Commerce and served as chairman of the industry committee of North Lake County Community Chest up to his death.

The funeral will be held at 1:30 p.m. Oct. 10. Memorials may be directed to the First Methodist Church of Waukegan.

Mr. Sams is survived by his wife, Ethel, and daughter, Mrs. J. H. Slate, Port Washington, L.I.

Effect of FDA Regulation Main Topic at Nebraska Conference

By THOMAS E. LETCH
Feedstuffs Staff

LINCOLN, NEB. — The way in which Food and Drug Administration regulations are affecting the feed industry was one of the main subjects examined at the annual Nebraska Feed and Nutrition Conference held Sept. 30 at the University of Nebraska.

Speakers dealing with this important topic included Alfred Barnard, director, Kansas City district, Food and Drug Administration; W. E. Glennon, president, American Feed Manufacturers Assn., Chicago, and Dr. C. W. Ackerson, department of biochemistry and nutrition at the university. Dr. Damon V. Catron, Walnut Grove Products Co., Atlantic, Iowa, was scheduled to speak but was prevented from appearing by illness.

In his talk, Mr. Barnard left little doubt as to the responsibilities the feed industry has to its customers and the ultimate consumer when handling medicated feeds. "We are concerned not only with the safety and health of the animals fed but also with the effect of these agents on the human foods derived from these animals," he stated.

"We in the Food and Drug Administration have an obligation to insure, insofar as our resources will permit, compliance with the provisions of effective new drug applications, the

(Turn to NEBRASKA, page 104)

4-Billion-Bushel Corn Crops Becoming Habit

By F. C. BISSON
Feedstuffs Special Correspondent

CHICAGO—One need not be much of a "G.T.G.B." (Grain Trade Gray-Beard) to remember when a 3-billion-bushel corn crop was a bumper one.

As a matter of fact, if you dampen your thumb slightly and riffle the records back only to 1949, you will find that the 10-year average U.S. crop of corn from 1949-1958 was only 3,270,642,000 bu. With an average that high, there had to be sev-

(Turn to CORN, page 105)

At Vermont Meeting

Feed Company Research Praised; Region's Egg Picture Drawn

BURLINGTON, VT.—Work done by feed company nutritionists was lauded by Dr. L. A. Moore at the Sept. 29 annual meeting of the Vermont Feed Dealers & Manufacturers Assn. at the University of Vermont. Their research, he said, enables farmers to rely on feed to supply necessary animal diets.

Dr. Moore, a member of the dairy cattle research branch of the U.S. Department of Agriculture, spoke on feed additives. He emphasized that they should not be used as crutches. Proper feed management, he said, is still of first importance.

Cattle, he said, need fewer additives than swine or poultry.

Robert P. Davison, Vermont extension director, who welcomed delegates to the convention, pointed out the responsibility of feed manufacturers to the farmer.

Other speakers at the conference were D. C. Henderson, chairman of the university's poultry department, and Dr. A. M. Smith, assistant professor of animal and dairy husbandry. They discussed the future of Vermont agriculture in these two fields.

Both said that efficient feeding practices are of great importance to the future success of Vermont farms.

(Turn to VERMONT, page 7)

Stiffer Regulation Of Drugs Requested

WASHINGTON—A committee of the National Academy of Sciences recommended a law authorizing the Food & Drug Administration to require proof of the efficacy as well as the safety of new drugs.

The science group's report was made public Oct. 6 by Arthur S. Flemming, Secretary of Health, Education and Welfare. In all, 11 recommendations were included in the report from the panel which was set up last summer at the request of the Department of Health, Education and Welfare following charges made against it during hearings last June.

Among the 11 recommendations of the group were the following:

To require certification procedures for all antibiotics. At present, certification is required only for those involving antibiotics that came on the market before 1950.

To set up an advisory organization of scientific and technical experts "as recognized resource for ad-

(Turn to REGULATIONS, page 105)

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ABC AUDITED PAID CIRCULATION

NCP

The regional circulation of this issue is concentrated in the northwestern states

Top of the Hopper

HERE IS AN EXAMPLE of the sort of problem which industries are running into in efforts to maintain or increase consumption of eggs and other animal products. A newspaper story on a medical meeting in Colorado quoted a Chicago Board of Health doctor as saying: "Fat eaten in dairy products and meats contributes more than any other factor to heart ailments. It is high time the food industries began marketing and endorsing lean meats and low-fat dairy products. It is a fallacy that beef, to be tender, must be fatty. We are still encouraged to eat eggs, although we know that one half of the dietary cholesterol Americans get comes from two eggs a day." Of course, there are competent authorities who will dispute some statements like this, but their word may not reach so many people so effectively. It is a good thing that PENB and others are taking steps to combat the cholesterol scare.

The first of a series of nutritional messages addressed by PENB to physicians will appear Oct. 15 in the Journal of the American Medical Assn. (see story on page 10). The ad stresses the impressive nutritional qualities of eggs and their low calorie content and includes this statement: "The cholesterol and fatty acid contents of two eggs—traditionally a widely preferred breakfast—fit well into the daily diet, even when lessened fat intake is recommended." The nutritional statements made in the ad have been reviewed by the Council on Foods and Nutrition of the American Medical Assn.

SPEAKING OF DOCTORS, feed men were impressed with the rational approach of Dr. Walter C. Alvarez, distinguished Mayo physician, in his newspaper column discussion of the Delaney legislation. Although he doesn't name the clause specifically, he had this to say in a recent column: "Of late there has been a tendency among our congressmen to pass laws to the effect that no substance which ever produced cancer in a mouse or rat—usually when given in huge doses for most of the life of the tiny animal—should ever be added to any food or lipstick or ointment used occasionally by human beings.

"I think most scientists today who know how long a cancer-making substance has to be swallowed or rubbed onto the skin before it can produce a tumor, will have no fear when exposed occasionally or for a small fraction of a lifetime to a tiny dose of the drug."

Concerning stilbestrol, Dr. Alvarez says most experts, after many years of experience with the drug, say they have given it in tiny doses for perhaps six months or a year and have never seen it appear to produce cancer. "I personally have no fear of it," he concludes.

A VERY INFORMAL poll of several feed additive producers indicates that research budgets in many instances are being devoted more to extensive product testing (toxicity and residue tests) required by current FDA requirements and less to new product development. However, new product development is very much in the thinking of executives and scientists of these companies, and it can be forecast fairly safely that more new products will be developed for feed use. However, because of the heavy investment in development, the market potential must be assessed very carefully, and products which appear to face a clash with FDA policies and requirements probably will be shelved readily. In essence, this points to fewer but better products, as one chemical company executive said.

A CAPITAL INVESTMENT of about $60,000 was required last year to

(Turn to TOP OF THE HOPPER, page 104)

How's Business?

AN EVERY WEEK REVIEW OF FORMULA FEED BUSINESS VOLUME, INCLUDING PRICE, SUPPLY AND DEMAND TRENDS

Arrival of a new feeding season and rising prices for many farm commodities have created a healthy outlook for the nation's feed manufacturers and dealers. In areas of heavy egg production, layer feeds are moving very well. Hog feeds and dairy feeds are increasing in sales volume. The market for beef cattle feeds is uncertain because of rising feeder prices and expanding cattle numbers. Chicago's hog-corn ratio advanced 1.1 this week to 15.7, compared with 11.5 for the comparable week last year. A decline of .6 to 72.5 was reported for the index of wholesale feedstuffs. It was 78.3 a year ago. The feed-grain index was up to 62.1 this week from 62 last week, but it remained below the 66.6 mark of a year ago. (Feed markets in detail on pages 102-104.)

Northwest

The chart of feed business in the Northwest last week showed a rising volume of demand for most types of feed. After a mediocre September and slow feed sales for most of the summer the arrival of fall improvement was enthusiastically welcomed.

Movement of layer feeds has been climbing right along with egg prices. Likewise, a very favorable corn-hog ratio has made hog feeds a good seller. Dairymen are beginning to buy more manufactured feed, but beef feeders haven't yet made a strong entry into the formula feed market.

This new upward trend in demand has made it necessary for some feed manufacturers to add another shift. Orders are backing up.

Most ingredients showed price strength last week because of greater feed demand, but the big item, soybean oil meal, dropped sharply, so manufacturers are making only slight adjustments in prices. Plentiful arrivals of new crop soybeans seem to be the main factor in the soybean meal slump.

Southwest

Reports from formula feed manufacturers this week are mixed as to the extent of improvement in business but generally agree that business is continuing to improve. Most mills contacted report full five day operation with some on a six day two shift operation.

Cattle feed business in the major portion of shipments and bookings continue at a steady pace. Hog feed sales are still heavy and most sources indicate that egg feed sales continue to improve. Most mills are optimistic about business for the coming months. The optimism stems mostly from the present favorable feeding ratios.

Price lists are substantially unchanged for the week. Protein meals were unchanged to lower while millfeeds had a sharp rise for the week. Feed grains were unchanged to slightly lower.

Northeast

Good prices for end products have held up farmers' income in this region and as a result sales of formula feed remained on the same plateau of previous weeks.

Egg mashes were well taken as egg prices continued on a high level. In the western New York area large candled eggs hit a five year high of 68½¢ doz., wholesale, and market specialists foresaw no major price break until January.

Dairy feed demand has held up especially well and could be further stimulated by frosts or snow. Broilers are in a seasonal decline but they have become a lessening factor in this area.

Turkeys are being slaughtered and put into storage for the coming holidays. On-the-farm prices are currently holding at 28¢ lb., which, one spokesman said, "wasn't too bad." Various strikes in the East, however, could have an effect on the market by causing a consumer buying switch from red meat and turkeys to chicken and fish.

There was one unusual situation in the ingredient market during the week. Nearby corn (close-up) rose 1@1½¢ despite being on the threshold of the new crop. It was said that some elevators had been cleared out to make room for oats and wheat and that corn itself had been slow in coming in. Farmers have been preoccupied with their feed harvests and the Chicago elevator strike contributed to the situation.

Molasses was unchanged but some apprehension is beginning to be felt about next year's supplies because of the turn of events in Cuba.

Vegetable proteins tended lower and most other proteins advanced in a mixed ingredient market.

Bran and middlings rose as the market bottomed out on inventory buying by large and small mixers.

Running time of formula feed manufacturers averaged 36 hours last week, unchanged from the previous period.

Central States

For the first week of October volume of sales in this area showed no particular switch from that of the weeks just preceding. Prices have been a little easier but they failed to attract much of any improvement in buyers' interest.

Running time shapes up about the same as it has been with the exception that an occasional plant has been operating on a slightly more restricted schedule and which in turn brought about an average of very slightly less than a 40-hour week.

Except in the more northern section of this area, temperatures have not been the type that would have stirred up any increased feeding operations.

The corn-hog ratio continues to show up well. The hog market has been edging back toward recent highs while corn has been reflecting the proximity of the new crop movement and corresponding reduction in premiums for the cash article over the basic December delivery.

South Central

Reports from manufacturers indicate that formula feed demand is holding steady at a moderately active pace. The majority of the plants are operating on a five-day basis, but there are exceptions that operate only four.

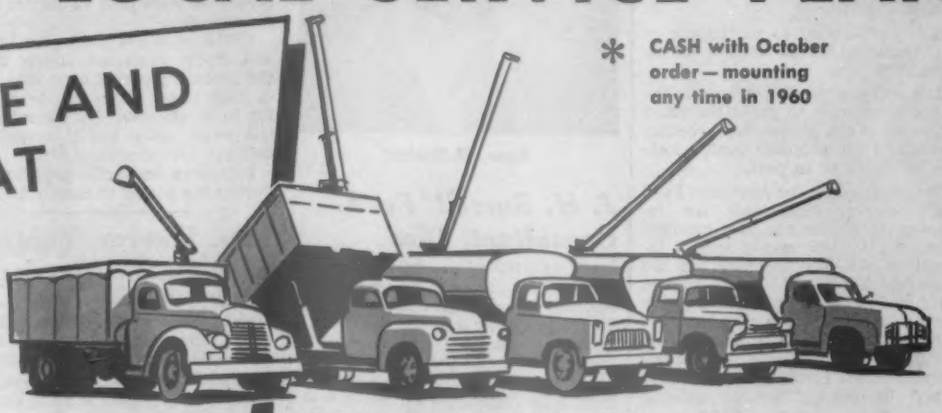
Feed men are of the opinion that sales are holding up very well this week considering the fact that many

(Turn to MARKETS, page 107)

CELEBRATION SALE

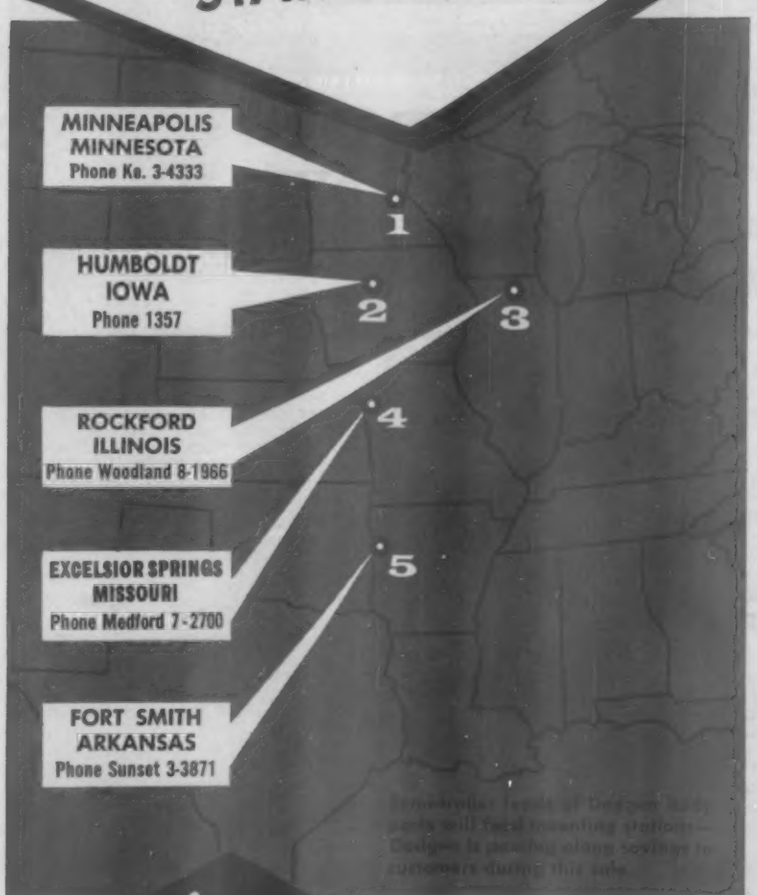
10% CASH OFF DURING OCTOBER* ON NEW DODGEN BULK BODIES TO START LOCAL SERVICE PLAN

SAVE TIME AND MONEY AT 5 **NEW** BULK BODY MOUNTING STATIONS



* CASH with October order — mounting any time in 1960

Included in this body sale are Dodgen All-Purpose bodies (lengths from 8 ft. to 35 ft.) and Bulkanizer tank type bodies for which Dodgen is Central States distributor.



Here's your chance to save hundreds of real dollars on the finest bulk bodies in the country!

Not a gimmick or a come-on, we're offering you a full 10% off on cash sales of Dodgen bulk bodies during October to get you acquainted with our new body-mounting stations. And you can have your bulk body mounted anytime up to and including December 31... and still take advantage of this cash discount!

Our new mounting stations are the result of the ever-increasing demand for Dodgen bulk bodies. Increased sales have allowed us to spread our installation, sales and service operations into a wider area.

The five new mounting stations are no more than approximately two hundred miles from any customer in the North Central, Central and South Central states.

So now's the time for you to act. Since we're practically in your back yard now, take advantage of this chance to convert to quality bulk operation with Dodgen equipment — and save money in the bargain!

Phone Humboldt 1357
(or local mounting point telephone shown above)

Dodgen

DODGEN INDUSTRIES

HUMBOLDT, IOWA

Rail Rate Increase Hearing Set Oct. 18

WASHINGTON — The Interstate Commerce Commission has scheduled a hearing Oct. 18 on a proposal by the nation's railroads to increase freight rates on a uniform basis. The railroads have published a tariff to become effective Oct. 24.

Verified statements (25 copies) in support of or in opposition to the increase are to be filed with the commission on or before Oct. 10.

The hearing will be held in the commission offices here beginning at 10 a.m. Oct. 18.

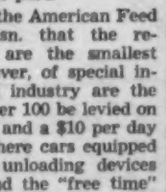
Persons desiring to participate in oral argument should request an allotment of time.

The oral argument is to include the issues of whether to grant the relief requested in the petition and whether to suspend the proposed tariff schedules in whole or in part.

It was noted by the American Feed Manufacturers Assn. that the requested increases are the smallest ever sought. However, of special interest to the feed industry are the proposals that 5¢ per 100 be levied on third grain transit and a $10 per day charge be made where cars equipped with loading and unloading devices are detained beyond the "free time" allowed in the tariff. The $10 charge would be in addition to existing charges for demurrage.

Dr. Laurent Elected To Board of AFMA

CHICAGO — Dr. Charles Kenneth Laurent, president of Marbut Milling Co., Augusta, Ga., was elected to the board of directors of American Feed Manufacturers Assn. at a recent meeting of the AFMA board here. Dr. Laurent will complete the unexpired term of C. N. Dannals, Jr., Atlanta Milling Co., who resigned.



Dr. C. K. Laurent

Dr. Laurent is a graduate of the University of Florida, obtained an M.S. degree in agriculture from Cornell University and his doctorate in agricultural economics from Cornell. Thereafter, he served as an extension poultryman for the University of Maryland, a cooperative agent for the U.S. Department of Agriculture and nine southern states between 1952 and 1955, and chairman of the poultry department, University of Georgia, for the next two years.

In 1957, Dr. Laurent joined Marbut Milling Co. as the general manager, and has served as its president since August, 1959. In addition to his many affiliations with professional and honorary scientific groups, Dr. Laurent was one of the original members of the Poultry Survey Committee, and is the current president of the Georgia Feed Assn.

Food Additive Order On Zoalene Broadened

WASHINGTON—The Food & Drug Administration this week announced an amendment of the food additives order on the use of the Dow Chemical Co.'s zoalene as a coccidiostat in feed for chickens.

Published in the Federal Register Oct. 4 was an announcement of an amendment which provides for the use of zoalene in the prevention and control of cecal and intestinal coccidiosis caused by Eimeria acervulina, Eimeria brunetti, Eimeria maxima, Eimeria necatrix or Eimeria tenella. A previous regulation had cleared zoalene for use in prevention and control of coccidiosis caused by Eimeria tenella or Eimeria necatrix.

James H. Burrell

J. H. Burrell, Feed Consultant, Dies

ST. LOUIS—James H. Burrell, 72, president of James H. Burrell & Co., business management consulting firm, died Oct. 4 after a brief illness.

Before organizing his own firm in 1949, Mr. Burrell had spent most of his business career with the Ralston Purina Co., managing various departments. While he was with Purina, he conducted important studies of many national industries to find new methods and new products which could be used in the manufacture of commercial feeds.

After retiring from Purina, he set up his consulting firm to serve clients in various types of industry, specializing in management, production, nutrition and other services to the feed industry.

Mr. Burrell wrote many papers for industrial, agricultural and commercial organizations and appeared before industry and other groups as a guest speaker. He was particularly active in the Feed Production School in Kansas City and was one of the original members of the group which planned and participated in this annual event. He was well known for his participation in both the planning and presentation of several of the schools. Also, he was active in the Midwest Feed Manufacturers Assn., which sponsored the school for some time.

Mr. Burrell, while he was with Purina, helped set up the American Dehydrators Assn. research program. Also, he was a member of the board of governors of National Farm Chemurgic Council.

Mr. Burrell is survived by his wife, six children and 14 grandchildren. Funeral services were held Oct. 6, with interment at Webster Grove, Mo.

J. H. BURRELL MEMORIAL FUND PLANNED

KANSAS CITY—Plans have been announced for a special fund to honor the memory of James H. Burrell, who died this week. Friends of the late Mr. Burrell, who was widely known in the feed industry, said that a memorial fund would be established in connection with the Oscar Straube Memorial Scholarship House at Kansas State University.

The group will work with the endowment committee at the university to provide something special for the new scholarship house, which has a number of needs. Further details on the plans will be explained later.

Meanwhile, it has been suggested that persons who wish to honor the memory of Mr. Burrell may send in contributions to the special fund which will be set up. Contributions may be sent to the Midwest Feed Manufacturers Assn., 20 W. 9th St., Kansas City 5, Mo.

Egg Market Stronger, Broiler Prices Steady

NEW YORK—Egg prices are riding 11-21¢ doz. higher than a year ago, and current broiler prices are mostly steady.

Egg prices continued their upward trend during the week ended Oct. 5, the U.S. Department of Agriculture reports. Advances ranged from 1 to 7¢ for the period.

Chicago reports a delivered price of 51½-53¢ on mixed large extras. New York's wholesale price Oct. 5 for white large eggs was 58-62¢. Iowa producers were paid 42-50¢ for grade A large eggs.

USDA says live prices for broilers and fryers remained steady during the reporting period at mostly 14½¢ in most states of the southern growing area. However, by the middle of the week, price levels in Arkansas declined ½¢ to mostly 14¢.

Delmarva broiler prices gained 1¢ during the period to mostly 15¾-16¢.

Mrs. Harvey Yantis, Ellis Baum Married

WHITE PLAINS, N.Y. — Mrs. Harvey Yantis, wife of the late Harvey Yantis, who was president of The Miller Publishing Co. and editor of Feedstuffs, was married Oct. 1 to Ellis C. Baum, Rye, N.Y., in the First Baptist Church here.

Mr. Baum recently retired as vice president of Continental Baking Co.

Matron of honor at the small family wedding was Mrs. W. Gerald Peterson, Minneapolis, sister of the bride. After Oct. 15, the couple will live in Scottsdale, Ariz.

Midwest Directors Meet in Ft. Worth

FT. WORTH—A preview of Midwest Feed Manufacturers Assn. plans and projects for the coming year was presented at an association board of directors meeting held Oct. 1-3 at the Western Hills Hotel in Ft. Worth.

One of the features of the meeting was a special program on Oct. 1, when the Texas membership of the association was on hand.

An "Oscar" was presented to Dr. G. M. Watkins, dean of the School of Agriculture at Texas A&M College, for his participation in the Texas version of the slide and tape presentation "Opportunity Knocks . . . at Home Plate." This presentation, sponsored by the Midwest association, shows the opportunities for college-trained persons in agriculture and the feed industry. Another "Oscar" was presented to Dr. J. R. Couch of Texas A&M for his participation in previous Midwest movies. Also, an "Oscar" went to Terry Alley for his role in the new slide presentation. This was presented at the meeting to his parents, Mr. and Mrs. Larry Alley, Pay Way Feed Mills, Kansas City.

A set of the slides was presented to Dr. Watkins by Charles Harris of Burrus Feed Mills, treasurer of the Midwest group.

FEED WAREHOUSE BURNS

MUSCATINE, IOWA—Fire has destroyed the warehouse of the McKee Feed & Grain Co. here. The property formerly was a soybean processing plant but recently was used only for storage of processed feeds. Loss included all the soybean processing equipment, it was reported.

CAPITAL COMMENT

BY JOHN CIPPERLY

Farm Programs

WASHINGTON—Since its publication in Feedstuffs Oct. 1, the U.S. Department of Agriculture has received calls from 40 states asking if the analysis of the Kennedy farm program with its published income parity farm prices is correct.

This information, which provoked national attention, was published by Feedstuffs prior to the recent talk by Vice President Nixon on the farm problems in the northeastern areas in which he used this information.

All the information and figures can be verified from official, but unpublished, documents here in Washington. Price levels of support which Feedstuffs published on the basis of income parity are virtually correct down to the penny.

The questioning of USDA seems to arise on the point that the Kennedy farm plan would push up the basic support price but, to attain that level, it would be necessary to restrain production drastically and substantially so that new production would fall. However, the Democratic nominee fails to explain how the cutback which would be necessary in livestock can be accomplished without a substantial boost in the market price.

Quoting from a document made available this week, one may contemplate the potential of rationing of red meat under federal flat—or a free market rationing of red meat in the market place.

If, as USDA economists now sense, the Kennedy plan would cut back red meat supplies to the extent that the per capita production under his program would make available only 149 lb. of red meat per capita as compared with the 1959 per capita consumption of 160 lb., one may only contemplate either government rationing or rationing by price in the free market—or perhaps a Brannan Plan payment to the livestock industry.

The Democratic candidate has failed to spell out how he would help the housewife at the butcher counter to protect herself when she learned that there was no meat available except, through a wink, that she could get steak if she bought a pound of lard.

It would be the black market all over again, even if the Brannan Plan were to complement the Kennedy program.

Mr. Nixon offers a variant of the Benson plan in which he would curtail production of basic crops now in surplus supply by inducing the producers of those crops to reduce acreage and obtain payments for such reductions in the form of payments in

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Poultry Management, Feeding Advice Given at Maryland

By WADE H. RICE
University of Maryland

COLLEGE PARK, MD.—The 1960 Feed Service Conference at University of Maryland's New Drake (chemistry) Auditorium had over 300 from 11 states and two foreign lands participating.

Opening the conference was R. H. Stottler, assistant dean, of university college who explained the interest of the university in conferences of this nature and showed slides of Maryland's expanded facilities now on the planning board at University of Maryland to accommodate various groups whose activities fell in the field of continuing adult education. Plans presented pictured a bright future for adult group meetings on the campus and improved facilities to accommodate them. Funds for these facilities are planned to come from various foundations rather than tax monies.

NEW DEVELOPMENTS IN POULTRY VACCINATION—Willis W. Hudson, Berlin (Md.) Milling Co., reviewed experiences of the firm in its search for effective vaccination methods and vaccines for control of Newcastle, Laryngo-tracheitis and Bronchitis and eliminating costly "breaks" in broiler flocks.

After nearly 20 years of this constant search and revisions to meet the changing needs for control measures, the present program used employs: At 8 days of age, Newcastle B, strain with Bronchitis added, with pigeon pox vaccine also used due to prevalence of pox attributed to heavy mosquito infestation in 1959. Pox vaccination is dropped with placements after September when the mosquito season is over. At 4 weeks of age: Revaccination interocular with B, Newcastle and brush method for tracheitis.

"Triple-Vac" was employed until "breaks" caused considerable trouble, and the method now employed is giving good results. Developing another approach or strain of vaccines to effectively employ triple vaccination without ensuing "breaks" is needed and looked forward to by many broiler producers, Mr. Hudson pointed out.

Dr. I. M. Moulthrop, in charge of the Salisbury, Md., diagnostic laboratory, reviewed various problems involved in securing satisfactory results with a newly marketed vaccine.

Abnormal conditions often develop in flocks treated with a newly developed vaccine which presents the problem of diagnosing the condition. Whether the vaccine caused the condition or the vaccine produced immunity is not always easy to determine, he said.

Dr. Moulthrop pointed out that since all vaccines are not designed to be administered in exactly the same manner at all times, there can easily be a "slip" in administering a new vaccine, even though it is a good vaccine and carefully manufactured. Handlers must become accustomed to using a new vaccine to learn the "right touch" in application and administer it under good controlled conditions free of contamination. Submission of both live and dead birds, complete history of the flock and all information relating to the case is helpful in securing a satisfactory diagnosis, he pointed out. In these respects, the service man can be of considerable help in making a satisfactory diagnosis possible by the diagnostic laboratory technicians.

Dr. R. W. Winterfield, formerly of American Scientific Laboratories, Madison, Wis., and presently with L&M Distributors, Berlin, Md., reviewed development of vent drop and brush methods of applying tracheitis and Newcastle vaccines. He pointed out that the vent drop method of applying tracheitis vaccine will provide serviceable immunity in young birds if the vaccine is of high potency. If of low potency, "breaks" are likely to occur. The same holds true for Newcastle vaccines.

Dr. Winterfield pointed out that infectious bronchitis vaccine can also be applied by the vent drop method and produce good immunity, with less reaction than when applied directly to the respiratory tract.

Bronchitis virus can be combined with viruses of Newcastle and Laryngo-tracheitis to give a double or triple vaccine, and as yet, no interference has been demonstrated between or among the components of such a vaccine in their ability to produce immunity in chickens for these three diseases.

BROILER QUALITY STUDIES—Dr. N. V. Helbacka of the University of Maryland pointed out that studies at several points by researchers have established that bruising in handling is the major cause for undergrades in broilers.

Citing a recent study of 23,000 random sampled birds selected by graders in six different processing plants from over 2 million birds showed that the following defects were of relative importance in the order listed, for producing undergrades in broilers. Simple correlations follow each defect: Procurement bruises, + .89; misbled and general discoloration, + .78; bark, + .66; breast blisters, + .44; fleshing, + .34; conformation, + .33; bloody wings, + .32, and oper. broken wings, + .31.

Cuts and tears, sores, operational bruises, pigmentation, procurement broken bones, finish, stunted, weight and diseased ranged from a simple

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DISCUSS PROJECTS—Dr. C. S. Shaffner (through door, in center), head of the poultry department, University of Maryland, discusses the advantages of the Maryland Medium White turkey with field service men on the tour of research projects at the conclusion of the conference sessions.

Cyanamid Appoints Feed Accounts Head

NEW YORK—Appointment of Dr. W. P. Johnson as manager for national feed accounts for American Cyanamid Co.'s agricultural division has been announced by E. H. Smythe, division director of marketing. Dr. Johnson will be reporting to Dr. M. J. Harvey, regional manager in the Midwest.

Dr. W. P. Johnson

During the seven years he has been with Cyanamid, Dr. Johnson has held several administrative positions, both within the Lederle division and the agricultural division. Prior to his new appointment, he was manager of animal industry field development. He is a graduate of Kansas State University where he received his D.V.M.

Dr. Johnson spent three years as an officer in the Army Veterinary Corps and obtained the rank of major. Following his time in service, he engaged in private practice of veterinary medicine in Slater, Mo., for eight years.

ICC Cuts Rail Rate, Increases Truck Rate

WASHINGTON—The Interstate Commerce Commission has allowed a cut in railroad rates for hauling grain in the Pacific Northwest and a hike in truck rates for hauling small shipments in the East.

An estimated $7 million a year will be saved by rail shippers because of the rate reduction of 20-30% on grain and grain products moving between points in northern Idaho, Washington and Oregon, on one hand, and these coastal cities: Seattle, Tacoma, Vancouver and Longview in Washington and Portland and Astoria in Oregon.

ICC officials said the new rail rates will be "competitive with" barge and truck rates and in some instances will be even lower than barge and truck tariffs.

ICC voted to allow truckers operating in the eastern central states to put into effect a surcharge of $1 on all shipments weighing less than 1,000 lb.

It was reported that truckers told ICC they needed the surcharge—to be in effect for a year—"to offset the impact of increased operating costs" since their last general rate increase of April, 1958.

The truck surcharge was vigorously opposed by shippers, and the rail rate cut was fought by truckers and barge operators.

ICC's rates and tariffs division upheld the rail rate slash and its action is final.

Poultrymen Told to Watch Chick Edema

ATLANTA—Poultry people have been cautioned to be on the lookout for signs of chick edema disease in the state.

Two cases were reported by laboratory officials, causing feed dealers and manufacturers to take precautions to see that fat supplies measure up to a satisfactory standard.

Not enough reports of the disease have been received as yet to create concern, officials said, indicating that the few reports were issued as a precautionary measure.

It was in 1957 that "X" disease was first reported in Georgia and tests at that time seemed to indicate the disease was caused by a substance in certain fats.

Broiler Prices Still Holding Above 1959

SALISBURY, MD.—Current broiler prices continue to hold up above last year's prices in spite of much heavier settings and placements. In Delmarva last week the average price paid on the farm was 15.28¢ compared to 14.49¢ for the same week a year ago. The price did slip, however, from the price received per pound the week before, which was 15.96¢.

Across the nation last week, hatcherymen in the 22 important broiler producing states set 40,392,000 eggs. This was slightly below the previous week but 21% above the corresponding week a year ago.

Settings were down from the previous week in 14 of the 22 states. States for which sizeable decreases were reported included North Carolina, Georgia, Maryland, California and Pennsylvania.

Placements in the 22 states totaled 28,536,000. This was slightly above the previous week and 16% above the corresponding week a year ago. Increases were reported for nine states compared with the previous week. States showing appreciable increases include North Carolina, Delaware, West Virginia and California. States reporting decreases include Pennsylvania and Virginia.

It appeared that September of this year would turn out to be a better month for making profits with broilers than a year ago, but the increased cost of baby chicks ruined the chances. Chick prices last month at 13.50¢ each were 42% higher than a year earlier. A year ago the price was 9.50¢ each. All other factors were more favorable. The average price received per pound was 16.5¢ compared to 16¢ September, 1959. Feed prices at $4.55 were 4% less than September, 1959.

Bowman Named Kelp Meal Distributor

CHICAGO—Yngvar Tollefsen, president of the Norwegian Export Import Co., Ltd., announced that Bowman Feed Products, Inc., Holland, Mich., has been named exclusive distributor to the feed industry for its Norwegian kelp meal tradenamed Algit.

Yngvar Tollefsen

"Algit is becoming increasingly important as a micro mineral feed ingredient," Mr. Tollefsen said. The Norwegian Export Import Co., Ltd., will continue to service the mink, soil conditioning and pharmaceutical industries as it has for the past several years. Bowman Feed Products, Inc., it was noted, has already established several evaluation projects in the poultry and beef cattle area. Continuing cooperation will be afforded all research interests heretofore established by Norwegian Export Import Co., Ltd.

At present a study is being made of Great Lakes and Atlantic Seaboard warehouse facilities aimed at supplying the feed industry with Algit from nearest port of entry, according to Bowman Feed Products, Inc. Present landed stocks are available in Milwaukee, North Pier Terminal in Chicago, New York and Baltimore.

Mr. Tollefsen also announced that the Bowman Feed technical personnel are cooperating with his group in producing a review of all research projects now under way, together with a review of established usages, in a bulletin to be released by Bowman the latter part of October.

Creditors of Chemell Hatcheries Chain to Hold Meeting Nov. 14

GAINESVILLE, GA. — Another meeting of creditors of the Chemell hatchery enterprises, which collapsed last year, has been slated for Nov. 14 at the Federal Building here. Purpose of the meeting will be to consider further dispensation of funds to approved claimants.

Meanwhile under consideration by J. Ellis Mundy, referee in bankruptcy, is a proposal for payment of necessary administrative expenses for the period of August-October, 1959.

A trustee's report, prepared by W. F. Cummings, trustee for Gainesville Hatchery, Inc., and Chemell Hatchery, Inc., has been approved by Judge Mundy. This report included an audit by the firm of Haskins & Sells, Atlanta.

Mr. Cummings has asked approval of partial payment of administrative expenses for the August - October period. Included in this list approved by the trustee were claims amounting to more than $1 million.

Judge Mundy has yet to rule on the requested authority to make payments which would allow payment of 50% of the amount due on approved claims.

The report showed that as of Sept. 8, 1960, a sum of $1,165,690 was available to pay these approved claims.

Creditors Listed

More than 200 firms and individuals are listed in the trustee's report, which does not include unsecured claims dating prior to the Chapter II proceedings.

The list of claims mentioned included:

Waynes Feed Store, Murphy, N.C., $3,567.64; Walker County Mining &

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DRUGS

(Continued from page 1)

worked with FDA to make FDA controls effective and at the same time not destructive to the economic structure of these industries.

It seems significant that this information is obtained now from Mr. Larrick and his special assistant, Malcolm Stephens, as the feed control officials are about to hold their annual meeting in Washington.

Possibly some feed men have failed to recognize the advance of federal government regulations which are now in full stream. This situation is evident in the Federal Trade Commission—it is evident in the regulatory activity of the marketing division of the fruit and vegetable branch of USDA—it has been widely publicized in the Federal Communications Commission.

For this fiscal year, FDA has available about 600 field inspectors for its enforcement activities. On a 50-state basis, this averages about 12 inspectors per state, with responsibility over many thousands of possible law violations—obviously not fully effective except where the agency may put emphasis on certain fields at certain times. This condition is now evident in FDA activities; in the last fiscal period, the agency concentrated field men in the food distribution field.

However, such a comparison is not pertinent to the long range outlook for the feed industry. The industry is too important to risk its own interests and its beneficial service to the nation and the world to dismiss an opportunity to meet with FDA to help reach an understanding which will prevent economic disaster to some companies and will help preserve the competitive situation in the industry.

Can Set "Ground Rules"

What Mr. Larrick explained to this reporter on the eve of the control officials' meeting is that the feed industry can meet with FDA to help lay down ground rules—rules which must conform to the administrative requirements of government officials and be effective and at the same time be practical in the vast concept of the feed industry, with its large producers of feed, its small producers, country mixers and feeders.

FDA attention will be on controlling drugs or pesticidal chemicals which may be in feeds and which may appear in milk and poultry as primary considerations, but this does not exclude livestock, where substances not permitted in food may indirectly enter the food supply. For example, some pesticide used on a crop may be found in feed and could work its way into food products.

In general, it should be noted that the government has now gone down the line in effecting broader controls by its regulatory agencies. It is probably too late for anyone now to reverse this tide. It may be recalled that during the OPA days, it was obvious that many price orders were ridiculous in view of the black market prices. However, OPA officials had no latitude of movement. Now the situation is similar. It is felt that FDA, FTC, USDA, FCC or FPC has no latitude of exemption.

The problem now is to work to have FDA actions affecting the feed industry within reasonable channels. It is expected that the president of the AFMA will make this same point in addressing the Association of American Feed Control Officials week after next.

Legislation

In connection with FDA activity, it is pointed out that another aspect of the subject may be found in Congress at the next session.

It is expected that Congress will be asked to remove the "grandfather clause" provision which permits some firms with prior sanction to use certain additives but does not permit use of these by others who did not have clearance prior to the effective date of the food additives amendment and its Delaney anti-cancer clause.

Removal of the grandfather clause in itself would end use of certain additives for all feed firms. However, the Secretary of Health, Education and Welfare previously stated that a provision would be asked which would exempt substances which do not show any residue in the animal or end product. This could clear up use of certain "suspect" substances.

In relation to current problems as a result of the Delaney clause, Mr. Larrick indicated that organic arsenicals are not yet "home free." It has been expected that this problem will be cleared up, but officials said that a clear case for exemptions has not yet been made.

Going back to the present situation and the application of strict FDA regulations—a situation in another industry may be recalled. Some persons may remember that the enactment of the Packers and Stockyards Act in 1908 evoked violent opposition from the then "big four" in the packing industry. These firms fought enactment of the law, which they feared would take from them their positive position in meat packing. To their surprise, enactment of the law made them grow more.

Recently, enactment of the poultry inspection law follows a similar pattern. It imposes strict sanitary and other inspection requirements which probably can be accomplished only by the larger poultry operations.

Now FDA comes along and asks that similar certifications or requirements be imposed to assure that there will be nothing harmful in poultry or dairy products. Other extensions of this proposal are not unlikely.

So, the stream of federal controls proceeds apace, and it must command the attention of the entire feed industry, including smaller firms.

It is now fortunate that FDA, under Mr. Larrick, wants a tender of cooperation from the feed industry. In that way, there could be ground rules which would help the industry in relation to compliance.

It is expected that Mr. Glennon of the AFMA will speak to the state control officials in a similar vein.

The meeting here this month of the control officials can be very important, and it is appropriate at this time to note that FDA has extended a broad invitation to industry to meet with FDA and take up problems of control in connection with use of drugs and pesticidal chemicals.

VERMONT

(Continued from page 1)

Prof. Henderson feels that poultry farms will be fewer and more specialized in the future but that the family farm of 3,000 to 10,000 laying birds will retain its important position.

He expects that the margin of profit on poultry farms will become progressively lower. Yet he feels that the poultry future in the northeast should be good because of high consumer demand and low supply there.

Dr. Smith cited the need for low-cost dairy feeds which cannot be used for human consumption as a possible way to increase much needed efficiency.

Dr. T. W. Dowe, director of the Vermont experiment station, spoke on South American animal husbandry nutrition. He cited sparse knowledge and indifference to feeding practices as problems there.

"Flexible Operation"

Prof. Henderson said it was his conviction that the future in Vermont would see egg production going to flocks of from 3,000 to 10,000 layers cared for by the owner and his family and possibly one hired man.

"This size unit is flexible in operation," he said. "Labor costs are relatively low, feed and equipment can be purchased to good advantage, a uniform production program can be developed and eggs and poultry meat can be marketed advantageously either direct to consumers in this deficit area or through a central egg marketing organization."

He quoted Elmer E. Town, commissioner of Vermont's department of agriculture, who said: "In general, the best egg and poultry market is here in New England. This is an importing area. We have been careless about quality and have not developed top quality products in large volume and have not promoted them aggressively under brand names.

"Our markets are closely tied together and our states are small. State brands or small private brands will not be as effective as New England trade names. The new New England Quality Seal, if carefully supervised with rigid quality control and centralized grading and packing, could be a great help."

Prof. Henderson listed the following factors which play a part in shaping the future of the poultry industry in Vermont: Geographic location, deficit egg production, urbanization, "family" farms, feed efficiency, credit, competition from other areas and labor.

"We, here in Vermont (and northern New England) are in a relatively favorable geographic position," he said. "We are living within a few hundred miles of 10 million New England consumers in one of the most concentrated population areas in the U.S."

Prof. Henderson noted figures which showed that Vermont is in a deficit area for both eggs and poultry meat. He said it was estimated in 1958 that New England was able to produce only two thirds of its market egg needs.

Vermont and northern New England, he said, had not greatly felt the effects of "urbanization." This urbanization seems to result in higher land values, higher real estate taxes and a heavier burden on the agricultural enterprises of the area.

Northern New England has had an increase in poultry numbers and egg production between 1940 and 1950 and also between 1950 and 1958. On the other hand, southern New England has shown a decrease in poultry numbers and egg production between 1950 and 1958. Prof. Henderson said the decline in poultry during that period was 16%, and the decline in egg output, 4½%.

Vermont's poultry farms are fewer today than several years ago, but these farms still are family units, Prof. Henderson emphasized.

Advantages of the family farm listed by Prof. Henderson are:

"1. Flexibility in the cost of labor which no corporation setup can match. The 40 to 48-hour week with paid vacation does not apply.

"2. There are no costly management or supervisory salaries to pay.

"3. Top efficiency in labor and equipment is possible."

Advantages, Disadvantages

Family farm disadvantages, he said, may include:

"1. Smaller poultrymen, in some cases, are paying more for feed than the extremely large poultrymen.

"2. The family-sized flock owner may or may not be at a disadvantage in marketing his products. This will depend on his program. . . ."

About credit Prof Henderson said: "If we are to have laying flocks of from 3,000 to 10,000 birds on family farms, credit must be forthcoming from some place.

"I believe the feed industry is interested in working with outstanding young people, who, in the opinion of their representatives, will be successful in the poultry business.

"I likewise believe that feed men are of the opinion that their business is that of producing and selling feed and service and doing as little financing as possible."

Discussing regional egg production competition, Prof. Henderson remarked, "I expect that commercial poultry farms in the Midwest will have the greatest effect on our future egg market here in New England. With lower feed costs, quality control programs, central grading and rapid transportation, the Midwest may well be one that will give us the greatest competition in the future.

"The South has been a deficit egg area and still is. Even so, southern eggs have been coming into our New York and Boston markets and have hurt our prices out of all proportion to the volume."

Prof. Henderson noted that feed costs in the Northeast are, in general, $5-10 ton higher than in the Midwest. "However, with the St. Lawrence Seaway, it may be possible that this difference will be less in the future," he said. "Furthermore, we know that some poultrymen are able to purchase feed at $5-10 ton less than other poultrymen in the area."

He admitted that New England labor costs are higher than other regions, but this difference in wages "may be overcome if labor is more efficient—for example, if we keep twice as many birds per man as our competitors."

FARMER GRINDS AWAY CHICKEN PROBLEMS

SYRACUSE, N.Y.—A Pennsylvania farmer caught in the throes of the poultry depression told here how he is making mince meat of his chicken business.

F. J. West, Nescopeck, told an educational meeting at the Northeastern Poultry Producers Council (NEPPCO) convention that disastrous fowl prices sent him searching for other outlets for his product.

"I decided then and there that I would make sausages or something out of them before I'd sell them for 10¢ lb.," he told the convention.

After many trials, Mr. West succeeded, and he has branched out from sausage to other delicacies from chicken meat.

PAY PANEL—Salesman compensation plans were reported by a panel of feed company sales managers at the second annual Feed Marketing Seminar in Chicago. The meeting was sponsored by the Sales Executives Council of American Feed Manufacturers Assn. Shown, left to right, are: Darrell M. Runke, general sales manager, Supersweet Feeds, Inc., division of International Milling Co., Minneapolis; Frank J. Steinmetz, director of personnel and training, feed division, the Pillsbury Co., Minneapolis; Ralph V. Grier, general sales manager, Nutrena Mills, Inc., Minneapolis; J. C. Huckabee, feed sales manager, the Quaker Oats Co., Chicago; Howard B. Herron, director of feed sales, General Mills, Inc., Minneapolis, and Emmet G. Amdahl, general sales manager, Golden Sun Milling Co., Estherville, Iowa, moderator.

Opportunity for Top-Notchers

Sales Managers Explain How Salesmen Are Paid

By GEORGE L. GATES
Editor of Feedstuffs

CHICAGO—How much money can a feed salesman make in a year?

Quite a bit, if he's a good producer tonnage-wise, and he'll probably do even better if that tonnage is sold on a profitable basis.

Or, his pay may be on a more modest scale if he's a new man or if his performance isn't up to the level his boss thinks is par for the course. Also, he might be looking for a new job if he isn't doing as well as he legitimately might be expected to do, because feed sales executives are bearing down harder on performance as competition gets keener.

As might be expected, the rate of income for salesmen in the feed industry covers a broad range, a panel discussion at the recent Feed Marketing Seminar indicated. However, this was not the major issue of the discussion, and the amount an individual takes home remains largely a matter between him, his boss and the tax man.

The panel, made up of sales executives from five feed companies, was brought together to explain how their individual sales compensation plans work. It was agreed that the elements of security plus incentive are necessary in all company plans, but different weights are applied to each element by different companies. And, while the mechanics vary, all the plans described aim at measuring performance against potential. Also, most provide a certain amount of flexibility for special circumstances, such as the profit margin of the feed sold, the newness of a territory or the amount of credit risk assumed by the company.

The panel participants (who are pictured and identified above) provided one of the liveliest sessions at the seminar sponsored by the Sales Executives Council of the American Feed Manufacturers Assn. (Other seminar sessions were covered in the Sept. 24 and Oct. 1 issues of Feedstuffs.)

Mr. Steinmetz provided this summary comment: "We have to be competitive with each other, and our differences are mainly in how we split the pay among expenses, salary and bonus."

Per Ton Cost

A question from the floor on sales costs per ton was politely ducked by panel members, but it produced some chuckles when Mr. Huckabee observed that "If a salesman moves 50,000 tons a year, a cost per ton would be less than a dollar."

Here is a brief summary of the opening presentations by the panelists:

Mr. Herron: We provide a base salary and a volume incentive of up to $2,000 annually. The incentive pay is paid in one sum and is based on a budget worked out for each salesman. Incentive pay starts on sales of over 80% of the budget. If the budget is realistic, it is as much of a challenge on a small budget as on a large one.

Mr. Huckabee: We need salesmen who understand management problems and who will help guard the credit of the company. Integration has increased the need for good sales-

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West Virginia Meeting Plans Set

BRIDGEPORT, W. VA.—Food and Drug Administration regulations and a number of "outlook type" talks will feature the 1960 convention program of the West Virginia Feed Dealers Assn. Oct. 20-21 at Blackwater Falls Lodge in Davis, W.Va.

Austin W. Carpenter, executive director of the Eastern Federation of Feed Merchants, Sherburne, N.Y., will lead off the program Thursday afternoon with a talk on "Why a Strong Feed Association?" Following this, H. L. Schilt, products control department, Ralston Purina Co., St. Louis, will discuss the "Effects of FDA Regulations on Feed Manufacturers and Dealers."

Closing out the afternoon talks will be a reading and discussion on the "Proposed New Look—West Virginia Feed Law," by Marvin H. Snyder, director, feed control division, Department of Agriculture, Charleston, W.Va., and E. H. Nelson, chairman of the West Virginia feed control committee, Bridgeport, W. Va., and with John W. Eshelman & Sons, Circleville, Ohio.

Friday morning, Donn Early, Early & Daniel Co., Cincinnati, will talk on "Present and Future Aims of Our Customer—The Farmer." John E. Sawyer, vice president in charge of distribution, Wirthmore Feeds, Inc., Waltham, Mass., will then speak on "Successful Feed Dealer 19??".

Closing out the convention will be Dr. Ernest J. Nesius, dean of the College of Agriculture, West Virginia University, Morgantown, W.Va., with a talk entitled "At Your Service."

The annual business meeting will be held following the close of the first day's sessions. It will be followed by a 6 p.m. social hour, followed by the annual banquet. Speaker at the banquet will be William H. Johnson, Farm Credit Banks of Baltimore, speaking on "Fence Rows."

USDA Predicts Higher Prices for Eggs, But Lower for Broilers

WASHINGTON—Egg prices, already at industry-stirring highs, are expected to continue above corresponding 1959 prices—but slipping broiler prices are likely to decline further in the remaining months of the year as demand declines seasonally.

The U.S. Department of Agriculture reports, also, that turkey prices have a good chance of staying above last year's until later this fall.

USDA says both egg and poultry prices in early September were above the year before, but while egg prices have shown still further improvement, broiler prices have gone in the opposite direction.

Meat Supplies Up

September supplies of poultry meat exceeded those of a year earlier, but egg production was below September of last year and is likely to continue in this position well into 1961.

Egg production Sept. 1 was less than 1% under that recorded the same date last year. This reflects the 4% smaller laying flock and the 3% higher rate of lay. Because of the 15% cut in the number of replacement chickens raised this spring, flock size will continue below the year before. On Sept. 1, potential layers on farms (chickens laying and not laying) were 7% fewer than the year before.

USDA notes that farmers have culled their flocks lightly this year partly because of the reduced number of replacement pullets available and partly because of higher egg prices, both expected and actual. As a consequence, prices of hens for meat have been higher than the summer and fall of 1959.

Broiler prices have been higher this summer than last summer, they

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To Mark Development Of Fryer Program

MINNEAPOLIS—Signalizing the development of a new chicken fryer program in the upper Midwest was the announcement by Peavey Feed Mills, a division of F. H. Peavey & Co., Minneapolis, of special activities taking place next week in two Minnesota communities, Pierz and Melrose.

On Oct. 10 a new processing-blast freezing plant will open in Melrose. On Oct. 12 the first birds processed at that new plant will be returned to the community where they were grown, Pierz, for a chicken supper to be served to farmers and townspeople to celebrate the community's part in the new area industry.

Peavey Feed Mills is one of four firms cooperating in the new program, which has as its first goal producing 22,500,000 chicken fryers per year in Minnesota and adjoining states. The other cooperating firms are: Farmers Produce Co., Willmar, Minn., with plants also in Litchfield and Melrose, Minn.; Jack Frost Hatchery, St. Cloud, Minn., and Allstate Hatchery, Willmar, Minn.

The group contracts with individual farmers for raising birds under the "Time-and-a-Half" fryer program, offering a guaranteed minimum price, with a profit sharing plan if prices go up. (The program was described in the June 4 issue of Feedstuffs.) Thirty fryer units have been completed or are under construction in Minnesota and the Dakotas. Peavey estimates that there will be 200 farmers raising fryers in 25,000-bird buildings by the end of 1961.

First goal of the new fryer program is raising 22,500,000 chickens in Minnesota and adjoining states each year. "A longer range goal is to lift the upper Midwest from a near-bottom position in chicken production to its rightful place as one of the top chicken fryer producing areas in the nation," according to J. R. Lindell, marketing director, Peavey Feed Mills.

Cooperators in the fryer program say that the celebrations at Melrose and Pierz will be repeated in dozens of communities during the coming months.

Twin City Seminar Set for Oct. 18

ST. PAUL—Field problems in livestock production as observed by University of Minnesota extension specialists will be the subject of discussions at the Twin City Nutrition Seminar Oct. 18. The seminar will be held at 7:30 p.m. at Peters Hall on the St. Paul campus of the university.

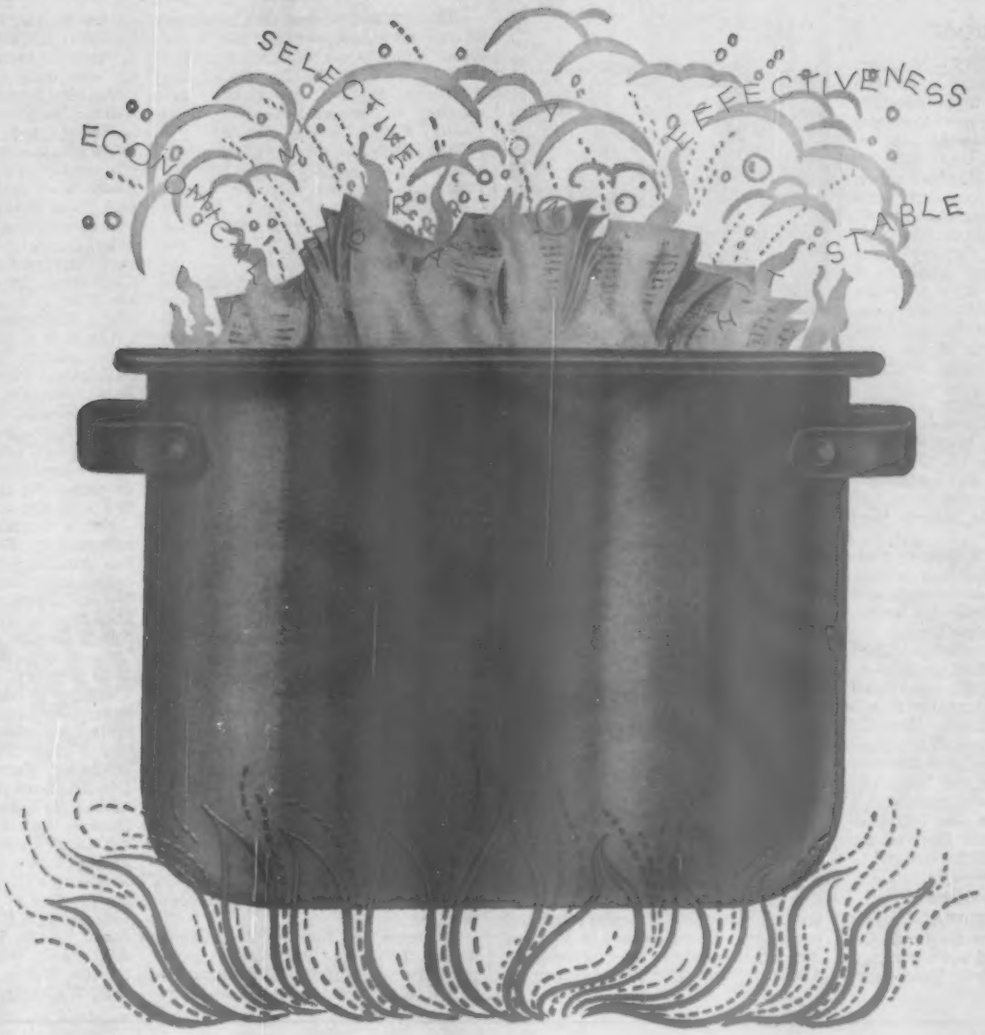
University specialists will give short talks, and then there will be periods for open discussion and questions and answers. The specialists who will speak are Dr. Robert Berg, poultry; Ralph Wayne, dairy, and Ray Arthaud, animal husbandry. Dr. R. J. Mead of the university is chairman of the meeting.

Chairman Elected At Colorado Milling

DENVER—George M. Hopfenbeck, Denver, was elected chairman of the Colorado Milling & Elevator Co. at the annual meeting of stockholders here. Other officers include: Earl F. Cross, Denver, president and chief executive officer; J. Lawson Cook, Denver, executive vice president, and M. E. Ehrlich, Denver, secretary.

Directors are: Donald S. Stubbs, Mr. Hopfenbeck, Sidney L. Brock, Jr., Mr. Cook and Mrs. Cross, all of Denver; Joseph H. King, New York; John J. Markham, Chicago, and Alonzo Petteys, Brush, Colo.

All were reelected except Mr. Stubbs. His election followed stockholder authorization to increase the number of directors from eight to nine.



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Montana Firm to Open Mill in November

GREAT FALLS, MONT.—Montana Flour Mills Co. has made a number of personnel changes in preparation for the opening of its new Ceretana feed mill here. Construction of the new plant—begun in April—is expected to be completed in November.

Henry Kahler, a long-time employee of the company's elevator division, will manage the new feed mill. Mr. Kahler has been country agent for the company at its elevators at Straw, Pendroy, and Great Falls. Henry Enochson, a life-long employee of the company, will be assistant manager and in charge of the new farm store which is being built adjoining the feed plant.

Replacing Mr. Enochson as fieldman for the Great Falls area is William Fluegel. He has been living in Bozeman, representing the company in the Gallatin Valley and southwestern Montana. The Fluegels have just moved to Great Falls, where they built a new home.

Taking Mr. Fluegel's former position is Allen Turvey, who was formerly a teacher in Bozeman schools and was employed by the Montana Extension Service in Madison County.

Harry C. Johnson, vice president and manager of the feed division at Montana Flour Mills, announced these changes. The company manufactures feed at Bozeman, Missoula and Chinook. The Great Falls feed plant will have a capacity of 100 tons of pelleted feeds per day and will make Ceretana feeds and custom pellets. A steam-roller is also being installed in the new mill. Cost of the expansion project is $500,000.

FEED STORE OPENS

BELLE PLAINE, IOWA—Charles Schwab, a dealer for Swift & Co. feeds is opening a feed store here under the name of Schwab Feed Service.

FRENCH VISITOR — Edmond De Thieulloy, sales promotion manager for the Jean Guyomarc'H Feed Co., Vannes, France, goes over a Kent feeding program with Roy Luce, director of sales training, Kent Feeds, Inc., Muscatine, Iowa. Mr. De Thieulloy recently completed a 10 day visit with officials of the feed manufacturing firm. He studied the Kent operations, Midwest farm operations and feed sales and distribution. He also attended the Iowa Feed Conference at Iowa State University. The French feed man read of the Kent 1959 dealer conventions and began a correspondence with Mr. Luce.

To Speak in Britain

LONDON—Dr. Cliff D. Carpenter, former president of the Institute of American Poultry Industries, will be chief speaker at the third annual convention of the British Broiler Growers Assn. at the Grand Hotel in Eastbourne, England, Nov. 8-10.

Dr. Carpenter will address the convention on the "problems which Britain's broiler industry might encounter during its expansion, in light of the experience of the industry in America," according to the announcement.

Facts on Eggs Presented to Physicians

CHICAGO—The first of a series of nutritional messages addressed to the nation's physicians will appear in the Oct. 15 issue of the Journal of the American Medical Association, according to announcement by the Poultry & Egg National Board.

This is the first of six full page advertisements to appear in 13 journals read by professional men and women "who play the top role in shaping the egg eating habits of 180 million American consumers," PENB reported.

Sponsored by PENB to clarify the concern of some physicians about cholesterol in eggs, the campaign is scheduled to run for three years at an annual cost of approximately $50,000, it was stated.

Headline of the ad reads, "All this . . . (list of nutrients in one egg) and only 77 calories." Nutrients as listed are: "Protein, 6.1 grams; carbohydrates, 0.3 gram; fat, 5.5 grams; unsaturated fatty acids, 3.6 grams; vitamins A, D, E, K, B_1, B_2, B_6, and B_{12}; pantothenic acid, niacin, folic acid, biotin and many essential minerals."

Nutritional statements of the advertisement have been reviewed by the Council on Foods and Nutrition of the American Medical Assn. and found consistent with current authoritative medical opinion, according to the advertisement text.

The advertisement further states: "Few foods known to man provide a higher ratio of nutrient value to calories than do eggs. The quality of egg protein is a standard against which the proteins of other foods are measured. The cholesterol and fatty acid contents of two eggs—traditionally a widely preferred breakfast—fit well into the daily diet, even when lessened fat intake is recommended.

"Because of their high nutrient value, their easy digestibility, compatibility and nutritional complementation of other foods, eggs are included in the recommended dietary for many conditions in which diet adjustment is indicated. Eggs are listed in the daily recommendations of nourishing liquid, restricted fiber, low sodium, restricted purine, low calorie and many other diets."

PENB reports that about half of the first year's $25,000 cost has already been obtained through a special drive among egg industry firms and associations. Checks for the fund have ranged from $100 to $3,000. Further funds may be marked "For Cholesterol Project" and mailed to the Poultry & Egg National Board, 8 South Michigan Ave., Chicago 3, Ill.

Lloyd H. Geil, PENB general manager, said it is expected that the remainder of the $50,000 for the first year's program will be raised within three months. The second and third years of the program will be taken care of by PENB's budget when voluntary set-aside investments are far enough along to incorporate the project into the annual budget.

Firms backing the program financially include: Albers Milling Co., Los Angeles; Allied Mills, Inc., Chicago; American Poultry & Hatchery Federation, Kansas City; Beacon Milling Co., Cayuga, N.Y.; Buster's Egg Farm, West Brookfield, Mass.; Central Soya Co., Inc., Ft. Wayne, Ind.; Chicago Mercantile Exchange, Chicago; DeKalb Agricultural Assn., Sycamore, Ill.; John W. Eshelman & Sons, Lancaster, Pa.; Heisdorf & Nelson Farms, Inc., Kirkland, Wash.; Honegger Farms Co., Inc., Forrest, Ill.; Hubbard Milling Co., Mankato, Minn.; Hy-Line Poultry Farms, Des Moines; National Egg Council, Kansas City; New York Mercantile Exchange, New York; Oyster Shell Products Co., Mobile, Ala.; Ralston Purina Co., St. Louis; Dr. Salsbury's Laboratories, Charles City, Iowa; Sugar Creek Poultry Farm, Greenfield, Ind.; Western Farmers Assn., Seattle, Wash., and Wirthmore Feeds, Inc., Waltham, Mass.

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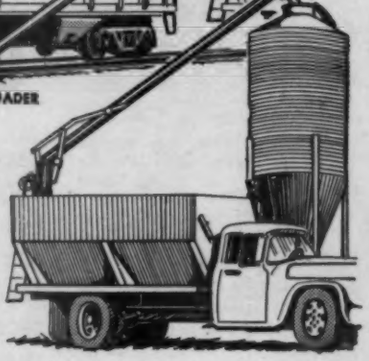

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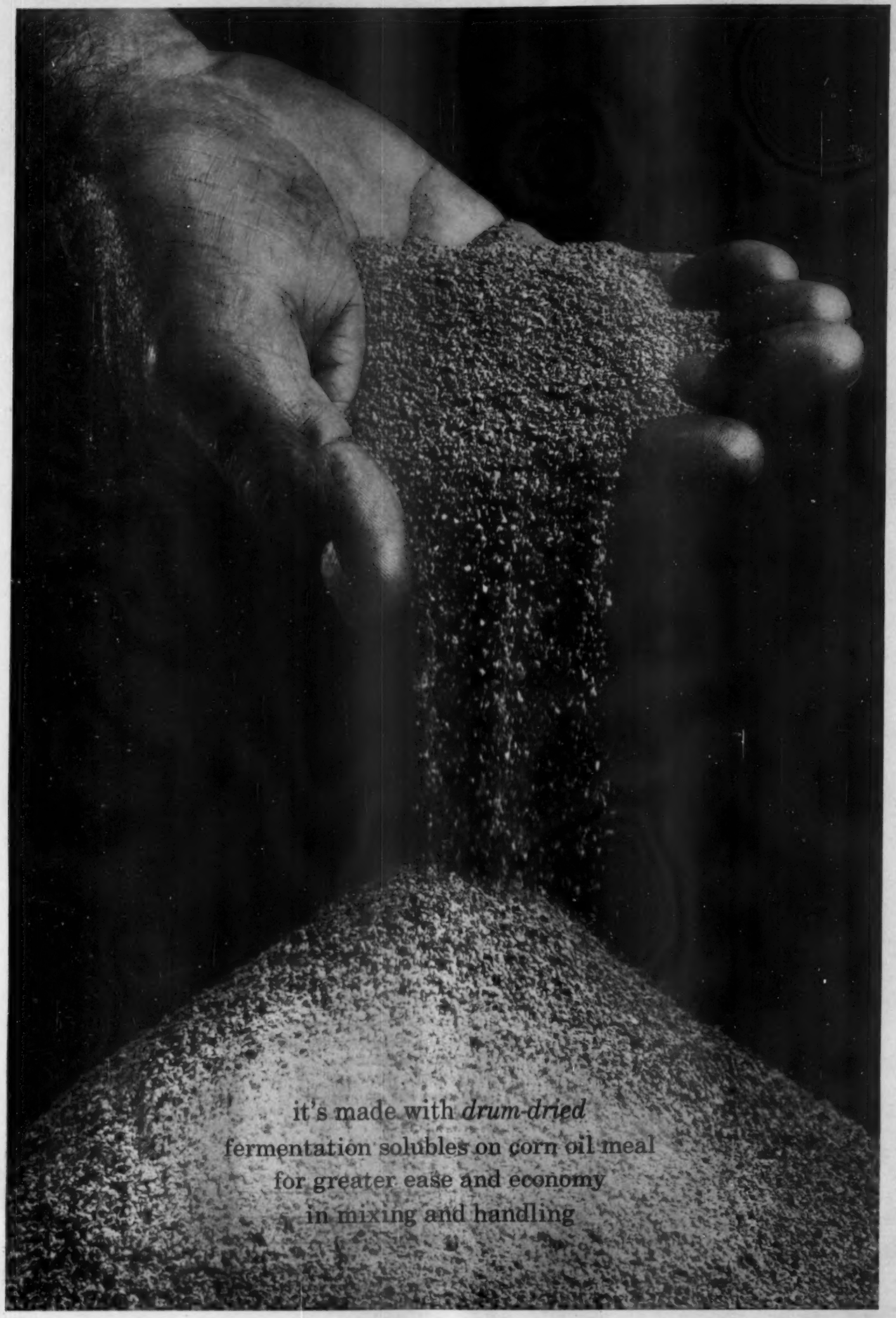
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Vitamin A and Other Beef Cattle Studies Reported at Minnesota Event

By DR. O. E. KOLARI
University of Minnesota

ST. PAUL—The annual Minnesota Beef-Grassland Field Day was held at the Rosemount Agricultural Experiment Station Sept. 22. Research results obtained during the past year were reported by the departments of animal husbandry, soils and agronomy.

Dr. A. L. Neumann, department of animal science, University of Illinois, discussed the vitamin A problem in beef cattle.

Lyle Lamphere, Central Livestock Assn. of South St. Paul, and Prof. R. E. Jacobs, University of Minnesota extension animal husbandman, demonstrated and discussed the grades and the feeding of the various grades of feeder cattle.

Visitors toured the various locations where experimental work is being conducted. Discussions of the experimental work followed the tours.

Research results presented at the Beef-Grassland Field Day included the following:

- Wintering steer calves fed late-cut oat silage (early dough stage) gained about 0.2 lb. more per head daily than calves fed early-cut oat silage (anthers well developed) on 5% less feed dry matter.
- Steers fed ground ear corn plus hay outgained cattle fed ear corn but no hay by 0.2 lb. per head daily.
- Trials with steers and heifers showed that cattle fed 2 or 4 lb. hay or no hay had similar feedlot gains when fed high silage-low corn rations. Cattle fed 6 lb. hay per head daily had lower feedlot gains.
- Vitamin A fed in massive doses for five days, or for two five-day periods, did not affect the feedlot performance of beef cattle fed either high corn silage or high shelled corn or ear corn diets.
- Feeding either 4, 6 or 8 lb. hay to fattening heifers had little effect on the feedlot performance of cattle when shelled corn was fed to appetite.
- Feedlot performance of steers was not improved as a result of supplementing a good quality alfalfa hay-barley-oats ration with 1 lb. of protein supplement per head daily.

Following are summaries of the reports given at the Beef-Grasslands Field Day:

GRASS SILAGES, ANTIBIOTIC AND STILBESTROL IMPLANTS FOR WINTERING CALVES—J. C. Meiske, A. L. Harvey and O. E. Kolari—Previous experiments have shown that wintering calves make satisfactory gains of about 1 lb. per head daily when rations of good silage (fed to appetite) and about 3 lb. each of hay and ear corn are fed.

The objectives of this year's experiments with wintering calves were: (1) To compare alfalfa-brome silage and two oat silages cut in the milk and early dough stages as the basic forage for wintering calves; (2) measure the effect of 12 mg. stilbestrol implants, and (3) to measure the effect of feeding an antibiotic.

Forty-eight "medium-to-good" native feeder steers, weighing about 360 lb. each, were allotted to six lots and fed three silages. Two lots each were fed: Alfalfa-brome silage; late-cut oat silage, and early cut oat silage. One lot of steers from each silage group was fed 50 mg. Terramycin per head daily. Four calves in each lot were implanted with 12 mg. stilbestrol at the start of the trial, Nov. 24, 1959. Approximately 3 lb. alfalfa-brome hay and 4 lb. corn were fed per head daily in addition to the silage.

Results: Average daily gains for the calves fed late-cut oat silage (1.45 lb.) were higher than gains of those fed alfalfa-brome silage (1.36 lb.) or early-cut oat silage (1.26 lb.). Feed dry matter required per hundredweight gain was least for steers fed late-cut oat silage (811 lb.) and highest for the group fed alfalfa-brome silage (885 lb.). The early-cut oats silage group required an intermediate amount of feed dry matter per hundredweight gain (851 lb.). Feed costs per pound gain were low for all groups and ranged 10.4-12¢. Feeding 50 mg. Terramycin per head daily had no appreciable effect on weight gains, feed consumption, feed efficiency or feed cost per pound gain. Calves implanted with 12 mg. stilbestrol gained 0.16 lb. per head daily faster than non-implanted cattle (1.44 vs. 1.28 lb.). A similar response was obtained in last year's trial.

THE EFFECT OF FEEDING VARIOUS LEVELS OF ENERGY UPON FEED LOT PERFORMANCE AND CARCASS CHARACTERISTICS OF FATTENING STEERS—W. J. Aunan, A. L. Harvey, O. E. Kolari and J. C. Meiske—Last year's trials showed no significant difference in weight gain of cattle fed either ground shelled corn or ground ear corn. Efficiency of feed use was almost identical when comparisons were made on the basis of total digestible nutrients. Fancy tallow was fed last year at 0.7 lb. per head daily to cattle fed ground shelled corn. Weight gains were not improved by the feeding of fat but efficiency of feed use favored cattle fed fat.

Objectives of two experiments with yearling steers were: To compare the feedlot performance and carcass characteristics of yearling steers fed (1) ground ear corn, cracked corn or cracked corn plus fat for a relatively short period of time (49 days); (2) ground ear corn with hay, ground ear corn without hay or ground shelled corn with hay.

Results: Average daily gains of cattle fed ground ear corn, ground shelled corn plus fat and ground shelled corn were 2.64, 2.20 and 2.01 lb., respectively. Cattle fed ground ear corn consumed more feed per head daily (25.4 lb.) than either the shelled corn plus fat (20.0 lb.) or shelled corn (20.6 lb.) groups. Feed required per pound gain was the least for the group fed 0.4 lb. tallow per head daily (9.1 lb.). The ground ear corn group required 9.6 lb. feed per pound of gain and the shelled corn group required 10.2 lb. feed per pound gain. Carcass grades of the steers fed shelled corn plus fat were significantly lower than the other two groups. Marbling scores were highest for steers fed ground ear corn and lowest for the group fed fat. Ether extracts of the 9-10-11th ribeye followed a similar pattern. Fat cover over the 12th rib was significantly higher for the group fed shelled corn than the other two groups.

In another trial, yearling steers fed ground ear corn plus 4 lb. alfalfa-brome hay per head daily gained faster (2.74 lb.) than cattle fed ground ear corn with no hay (2.53 lb.) or cattle fed ground shelled corn with 4 lb. hay (2.65 lb.) per head daily. Feed per hundredweight gain was the least for the ground ear corn-no hay group —714 lb.—and highest for the group fed ground ear corn and hay—797 lb. Cattle fed ground shelled corn plus hay needed 740 lb. feed per hundred pounds gain. Feed cost per hundred pounds weight gain ranged from $11.91 for the ground ear corn-no hay group to $11.85 for the ground ear corn-hay group to $13.21 for the group fed shelled corn plus hay. Results of this trial (106 days) are preliminary.

THE EFFECT OF FEEDING FOUR LEVELS OF HAY WITH CORN SILAGE UPON FEEDLOT PERFORMANCE OF FATTENING CATTLE—O. E. Kolari, A. L. Harvey and J. C. Meiske—Corn silage is usually considered an economical and efficient feedstuff when fed to fattening cattle in drylot. However, limited data are available on the amount of hay that should be fed to cattle which are fed high silage rations and restricted amounts of corn. The objective of two trials was to determine the effect of feeding hay at four levels upon the feedlot performance of beef cattle during the high silage phase of feeding.

Two experiments were conducted in which four levels of hay were fed to 48 yearling Hereford steers and 48 heifers. Hay levels fed per day were: (1) No hay; (2) 2 lb. hay; (3) 4 lb. hay, and (4) 6 lb. hay. Corn silage was fed to appetite in both trials and corn was fed at 6 lb. per head daily. The average daily crude protein intake of cattle between the four hay treatment groups was equalized with linseed oil meal to meet recommendations of the National Research Council.

Results: The average daily gains of steers fed no hay (2.62 lb.), 2 lb. hay (2.62 lb.) or 4 lb. hay (2.58 lb.) were similar and greater than cattle fed 6 lb. hay (2.42 lb.) per head daily. Similar data for the heifer trial, in the order given above, were 1.89, 1.88, 1.82 and 1.61 lb.

Results of both trials were in good agreement and indicated that rate of gain in beef cattle was reduced when higher levels of hay were fed with high silage-restricted corn diets. Efficiency of feed use was similar for the groups fed either 0, 2 or 4 lb. of hay. Feed required per unit weight gain was 9.7% (steers) and 18.1% (heifers) greater for cattle fed 6 lb. of hay than their respective control groups fed no hay. Feed costs per hundred pounds weight gain were small and ranged from $12.34 to $14.04 in both trials. One-half of the cattle in the heifer trial had been implanted with 12 mg. stilbestrol at the start of the trial. Implanted heifers outgained non-implanted heifers by 0.20 lb. (1.91 vs. 1.71 lb.).

THE EFFECT OF FEEDING THREE LEVELS OF HAY TO FATTENING HEIFERS FED GROUND SHELLED CORN — O. E. Kolari, A. L. Harvey, J. C. Meiske and W. J. Aunan—Opinions vary regarding the amount of hay that should be fed to fattening cattle in drylot when ground shelled corn is fed. The objective of this experiment with fattening heifers fed ground shelled corn was to measure the effect of feeding three levels of hay on feedlot performance, carcass grade and rib eye marbling scores.

Forty-six Hereford heifers were allotted into six lots, two lots for each of the following hay levels: (1) 4 lb.; (2) 6 lb. and (3) 8 lb. per head daily. Two of the lots had seven heifers; the other lots had eight. Ground shelled corn was fed to appetite and the crude protein intake between treatments was equalized with linseed oil meal to meet recommendations of NRC. This is a 98-day preliminary report.

Results: Weight gains of heifers fed either 4, 6 or 8 lb. hay per head daily were 2.10, 2.01 and 1.99 lb., respectively. Average daily feed intakes for the three groups, in the order given above, were 19.6, 20.2 and 21.3 lb. Heifers fed 6 or 8 lb. hay per head daily required 8 and 15% more feed per unit weight gain, respectively, than the group fed 4 lb. hay. One-half of the heifers within each lot was implanted with 12 mg. stilbestrol at the start of the trial (June 22, 1960). These heifers had been previously implanted with 12 mg. stilbestrol on Feb. 16, 1960. In this experiment, reimplanted heifers outgained the non-implanted heifers by 0.24 lb. (2.15 vs. 1.91 lb.).

FEEDING VITAMIN A TO FATTENING STEERS AND HEIFERS —O. E. Kolari, A. L. Harvey, J. C. Meiske and W. J. Aunan—The need

PARADING PICKETS—Old-timers at the Board of Trade building in Chicago can't recall any previous strikes among milling industry workers which spread far enough to bring pickets to their exchange, as shown here. These pickets stopped their parading following settlement between a union and the Chicago Board of Trade. Strikes by elevator, feed and flour mill workers had, until recent settlements, curtailed much of Chicago's grain trading and milling (Feedstuffs, Oct. 1).

USDA REPORT ON FATS AS ADDITIVES ISSUED

WASHINGTON—A publication on the use of fats as feed additives, "Utilization of Fats in Poultry and Other Livestock Feeds," has been released by the U.S. Department of Agriculture.

USDA points out that today over half a billion pounds of animal fats are used annually for fat-fortified feed.

Included in the publication are tentative definitions recommended by the Association of American Feed Control Officials to avoid uncertainty and confusion in naming, grading and classifying fats for use in feed, along with standards for analytical characteristics and physical properties approved by the Nutrition Council of the American Feed Manufacturers Assn.

The publication deals with antioxidants used for these fats, procedures to be followed in adding them and their effect on nutrients in the fats; methods of storing the fats; methods of mixing them with feeds, and problems involved in pelleting fat-containing feeds.

The publication reviews in detail the result of research on the feeding of fat-supplemented rations to poultry (chickens, turkeys, geese and ducks), swine, cattle (beef and dairy cattle and calves), lambs and sheep, dogs and mink.

Single copies of the publication, Utilization Research Report No. 2, can be obtained by writing: Office of Information, U.S. Department of Agriculture, Washington 25, D.C., or the Eastern Utilization Research and Development Division, U.S. Department of Agriculture, Philadelphia 18, Pa.

for supplemental vitamin A in rations for fattening cattle in drylot has received considerable attention in recent years. Cattle in the cornbelt are usually fed corn, corn silage and hay in various combinations.

During storage under usual conditions, carotene (or vitamin A activity) is reduced. After one year's storage the carotene content of hay may be reduced to a value as low as 9% of the original amount when cut. Some reports show three-fourths of the carotene content of corn retained after one year's storage. Drying of corn at high temperatures or heating of high-moisture corn in storage will reduce its vitamin A activity. High nitrate content of corn silage has been suggested as interfering with the utilization of vitamin A.

The objective of this experiment was to determine the effect of feeding vitamin A to fattening cattle on feedlot performance and plasma vitamin A values.

Results: Feeding vitamin A in massive doses of 100,000 units per head daily for either one or two five-day periods had no effect on the feedlot performance of steers and heifers in three trials.

In the first trial, heifers were fed vitamin A at 100,000 units per head daily for five days at the start of the trial. Final weights were taken 106 days later.

In the second heifer trial and in the steer trial, vitamin A was fed at 100,000 units per head daily for five days at the start of the trials (June 2 and May 24, 1960, respectively). They were fed 100,000 units of vitamin A per head daily again on Aug. 3, 1960, for a period of five days. Results of plasma vitamin A analyses indicated little or no difference in the plasma concentration of heifers fed or not fed vitamin A (37 vs. 35 mcg.%). Plasma vitamin A concentrations for the control and vitamin A supplemented steers fed ground shelled corn plus hay, ground ear corn and no hay or ground ear corn plus hay were, respectively: 22 and 41; 24 and 33, and 37 and 50 mcg. vitamin A per 100 ml. plasma.

PROTEIN SUPPLEMENTATION OF PELLETED RATIONS FOR FATTENING YEARLING STEERS—**D. Reimer, E. C. Frederick, O. E. Kolari and L. E. Hanson**—Supplemental protein is usually fed to fattening cattle, irrespective of the ration fed. Barley and oats grown in Minnesota usually contain 11 to 12% and alfalfa hay about 15% protein. Therefore, beef cattle rations based on barley, oats and alfalfa hay should provide adequate protein to meet the recommendations of NRC.

The objectives of this experiment, in which barley, oats and alfalfa hay were fed, were to determine: (1) The value of supplemental protein; (2) the value of adding a small amount of dried cane molasses, and (3) the value of implanting steers with 24 mg. stilbestrol.

Results: Two trials (40 steers each) were conducted in which yearling steers were fed: (1) A pelleted grain mixture of 70% barley and 30% oats to appetite, alfalfa hay free-choice and 1 lb. soybean oil meal; (2) same as (1) except 1 lb. corn replaced soybean oil meal; (3) same as (1) but 2% of the barley and 1% of the oats replaced with dried cane molasses, (4) same as (3) except 1 lb. corn replaced soybean oil meal.

Combined average daily gains and feed required per hundred pounds gain for two trials, listed in the order given above, were: (1) 2.39, 997; (2) 2.46, 967; (3) 2.38, 1002, and (4) 2.32, 989 lb. When the data for the four lots of cattle fed soybean oil meal were averaged, their average daily gains were 2.39 lb., compared to 2.39 lb. for the cattle fed no soybean oil meal. Four lots of molasses-fed cattle gained at the rate of 2.35 lb. per head daily compared to 2.43 lb. for cattle fed no molasses.

One-half of the cattle in each lot were implanted with 24 mg. stilbestral at the start of both trials. Combined data from both trials showed that stilbestrol-implanted cattle gained 23% faster than cattle not implanted (2.63 vs. 2.14 lb.).

THE VITAMIN A PROBLEM IN BEEF CATTLE—**A. L. Neumann**—Thirty west Texas calves purchased in the fall of 1958 had been used in three successive studies: Shipping fever, antibiotics and high-moisture vs. dry shelled corn. During these trials they were fed rations that presumably would be adequate in carotene. Weight gains of the cattle were normal during these experiments.

The following spring, May 5, 1959, the cattle were allotted to an experiment designed to study the effect of frequency of feeding. This trial ended Aug. 17, 1959 and, during the experiment, the cattle were fed a complete mixed ration that consisted of 64% ground shelled corn, 10% soybean meal, 1% alfalfa meal and 25% ground corn cobs. The alfalfa meal had been calculated to supply an equivalent of 7,000 I.U. vitamin A; however, subsequent analyses indicated that it supplied only 1,000 I.U. vitamin A equivalent per head daily.

For the first 56 days of this trial, weight gains and feed consumption were normal. Feed analyses showed that carotene intake per head daily ranged from an equivalent of about 4,000 to 11,000 I.U. vitamin A. At about this time several steers showed symptoms of vitamin A deficiency—lameness, anasarca or edema of the brisket, knees, hocks and hoof-heads. The cattle appeared unthrifty, with dead-looking haircoats. Night blindness occurred, but not consistently. An open-shouldered condition was observed in some of the steers. Convulsive seizures occurred when the cattle were moved about rapidly. Inflamed watery eyes were not observed, and diarrhea was not prevalent.

During the next 56 days of this trial, the calves gained only 1.28 lb. per head daily and feed intake was reduced. The cattle were then allotted into three treatments (Trial I) to measure the effect of: (1) Feeding a basal ration (containing an equivalent of about 7,000 I.U. vitamin A): (2) basal plus an equivalent of 21,000 I.U. vitamin from alfalfa meal, and (3) 21,000 I.U. vitamin A from a commercial supplement. The basal ration supplied a daily vitamin A equivalent from carotene that ranged from about 7,000 to 8,500 I.U.

Average daily gains of the cattle fed no supplemental vitamin A, alfalfa meal or the commercial supplement were 0.95, 1.74 and 1.93 lb., respectively. Average plasma vitamin A values were increased 2.9, 10.6 and 23% over initial values as a result of the three treatments—basal, alfalfa meal and a commercial vitamin A supplement, respectively, for a period of 42 days.

In Trial 2, 14 of the steers were allotted to two treatments for a period of two weeks: (1) 100,000 I.U. supplemental vitamin A from a commercial supplement and (2) an equivalent amount of apparent vitamin A activity from alfalfa meal. Plasma vitamin A values were increased 21.8 and 15.5% over initial values after two weeks' supplementation with either a commercial vitamin A supplement or alfalfa meal, respectively.

The remaining 16 steers were fed four graded levels of supplemental vitamin A in Trial 3: (1) None; (2) 7,000; (3) 28,000, and (4) 56,000 I.U. One steer in each group was slaughtered after 33 days, one after 58 days and two after 75 days on trial. Final plasma vitamin A values for the treatments, listed in the order given above, were increased over initial plasma vitamin A values by: (1) 18.4; (2) 12.8; (3) 40.4, and (4) 20.8%, respectively. Average liver vitamin A and carotene stores for the above listed treatments, respectively, were: (1) 0.04, 1.70; (2) 1.25, 2.67; (3) 4.64, 0.75, and (4) 14.57, 1.04 mcg. per gram.

Results of these studies with vitamin A indicated that massive doses of either carotene or vitamin A greatly increased plasma levels of vitamin A. Graded increments of supplemental vitamin A had no consistent effect on plasma vitamin A levels or liver stores of carotene. Liver stores of vitamin A were increased with each succeeding increment of supplemental vitamin A. Cattle used in these trials had been implanted with various levels of stilbestrol. Stilbestrol implants (0, 12, 24, 36 and 48 mg.) had no effect on plasma vitamin A or on rate of recovery during therapy.

Ad Agency Started

GAINESVILLE, GA.—Sawyer Advertising, a complete advertising service, has begun operation in Gainesville.

Operated by Gordon Sawyer, the advertising agency will specialize in service for the poultry industry and for general businesses in the growing northeast Georgia area. Gordon Sawyer for the past five years has been manager of the southeastern division of the National Broiler Council.

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No Relaxation Seen In Zero Tolerance For Milk in Future

PETALUMA, CAL.—A California Department of Agriculture official held it unlikely that the Federal Food and Drug Administration would adopt regulations in the near future permitting any residue in milk is his recent talk to the Upper Bay Area, California Hay, Grain & Feed Dealers Assn. here.

Dr. James T. Ralph, deputy director for the California Department of Agriculture, said that "for various reasons too detailed to discuss fully," it seemed unlikely that any such regulations would be adopted.

He pointed out that appropriate tolerances have been established for residues of DDT on many fruits and vegetables and in the fat of meat, but no tolerance has been established permitting any DDT or other pesticide chemical in milk.

"Only rarely does enough pesticide material drift onto feed to seriously affect the animals or to interfere with the weight-gain of meat animals or milk production of dairy animals," he said, "but all possible means should be employed by the user to eliminate or minimize drift."

However, he noted that DDT and certain other chlorinated hydrocarbon pesticides present a different and much more difficult problem to control. "Small amounts of DDT on the feed of dairy and beef cattle do not injure the animals, but these chemicals do accumulate in their body fat and milk fat, and then there is trouble with legal requirements," said Mr. Ralph.

He pointed out that the state's requirements contrast with federal tolerances on one point. The state has authorized a tolerance of 0.5 ppm. DDT on feed sold for dairy animals, while federal requirements permit no DDT on hay or similar feed. "This is based on feeding trials and analytical data showing that such a low level on feed does not result in any contamination detectable by current analytical methods," said Mr. Ralph.

Share Problem

He stressed the need for the producer of dairy feeds to share in the dairy men's problem and assist in its solution. He said more information is needed on the status of all the different pesticides used in modern agriculture to determine how much, if any, goes from the cow to the milk, and to determine if that amount is of any detrimental consequence to the wholesomeness of milk.

"Because of these facts, growers of hay and other feed crops for dairy cattle must program their pest control measures to avoid residues of contaminating chemicals on the marketed products," he said.

He also noted the necessity of farmers and agricultural pest control operators applying pesticides on neighboring fields exercising special care to avoid drift. "I am pleased to report that there is outstanding cooperation in this necessary exercise of care, caution and judgment," Mr. Ralph said.

He noted that routine analysis of hay on the markets throughout California has shown it to be well within the tolerance, but said dealers should bear in mind that hay shipped interstate should not contain any detectable amounts of DDT.

He noted that during the past three months, the Feed Control Laboratory had reported on 110 samples, 60 of these mixed dairy feeds, and in only one case was DDT found in sufficient amounts to contaminate milk. This same ratio of contamination has been found to apply to ingredients such as coconut meal, alfalfa meal, cottonseed meal, beet pulp and rolled barley, said Mr. Ralph.

"While the Feeding Stuffs Law provides restrictions only on feeds that contain substances harmful or deleterious to the animal, we are recommending that the same tolerances be applicable to mixed dairy feeds and feeds not classified as raw agricultural products," said Mr. Ralph.

The Bureau of Dairy Service, which enforces quality standards and standards of composition for all milk products, has adopted a program for the collection and analysis of milk product samples for pesticide residue determinations as a routine part of its activities, he said.

Milk and cream have been declared to be raw agricultural commodities and as the result of a hearing, the department, through its bureau of chemistry, established a zero tolerance for DDT in these products.

Products Analyzed

Dr. Ralph noted that since July 1, 80 samples of milk products were analyzed for pesticide residues and only three samples were found to contain DDT in excess of 2.5 ppm. on fat basis. If this amount was reduced to milk equivalent, it would result in 0.1 ppm. in milk.

He pointed out that Gov. Brown has appointed a committee of scientists and others to look into this field and to report about the first of the year on a proposed state public policy and other related matters.

Dr. Ralph pointed up the size and growth of the feed industry. He noted that in 1959, the value of the mixed feeds purchased by farmers in California was about $40C million, representing sales of almost 6 million tons. In the previous year, the total sales were about 5 million tons.

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Feed Group Announces 5 District Meetings

MILWAUKEE — A series of five district meetings has been announced by Central Retail Feed Assn. headquartered here. The meetings will be held Oct. 17-21.

The meetings are scheduled as follows: Oct. 17, Hotel Eau Claire, Eau Claire, Wis.; Oct. 18, Elks Club, Wausau, Wis.; Oct. 19, Hotel Beaumont, Green Bay, Wis.; Oct. 20, Elks Club, Janesville, Wis., and Oct. 21, Elks Club, Fond du Lac, Wis.

All of the meetings begin at 6:30 p.m. with a dinner. Speakers are: Dr. Robert Grummer, chairman, department of animal husbandry, University of Wisconsin; Walter B. Griem, head, laboratory division of the Wisconsin Department of Agriculture, and Hiram B. Hegge, Bar-Non Mills, Inc., Whitehall, Wis., new president of the association.

Specialist Dies

BATON ROUGE, LA.—Clyde Ingram, Louisiana State University poultry specialist, was found dead Sept. 16. Mr. Ingram was out in the state working on a series of meetings and was found dead in his hotel room.

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MISSOURI FEEDER PIGS—These are some of the Missouri feeder pigs which Glenny Bros. brings to Illinois, after quarantine period, and raises on its own farms or sells to farmers.

Illinois Feed Dealer Involved In Major Swine Operations

By AL P. NELSON
Feedstuffs Special Writer

Two Illinois brothers who operate a feed dealership plus five farms are involved in swine operations in a major way.

Glenny Bros., at Rockford, Ill., is currently raising and marketing 2,000 pigs per year in a carefully supervised breeding and feeding program. In addition, the firm has begun buying Missouri feeder pigs which are fed out or sold to other farmers. And plans have been made, too, for possibly contracting with farmers to raise some of the Missouri pigs for the firm.

The Glenny brothers—Thomas and Warren—have cattle and lamb feeding operations also.

The feed business is handled on one of the Glenny farms, where a mill and feed storage building are located. Plans have been made to expand the milling operation. The firm is a Quaker Oats dealership.

All Missouri pigs are raised in separate quarters from the regular Glenny pig herds, according to Thomas Glenny, who manages the operation.

Up until Aug. 10, Glenny Bros. had brought in three semi-trailer loads of Missouri pigs—380 to a load. The size of the Missouri feeder pigs varies from 40 to 50 lb. Mr. Glenny points out that these pigs are from sows that often roam the Missouri hills and hunt for feed. Thus, some of the pigs are small when Glenny Bros. gets them.

Kept in Quarantine

The pigs are kept in quarantine in Missouri 14-21 days before Glenny ships them to Illinois. A state veterinarian vaccinates, castrates the pigs and gives them a double cholera shot. Mr. Glenny says that it costs him 10¢ per pig per day for the feed and 85¢ per hog for the veterinary care during the quarantine period.

Before the pigs are shipped to Rockford, they are fed a "Pig Bracer" with antibiotics, so they will arrive in good condition and be ready to put on quick growth.

When the pigs arrive in Rockford, they are placed on one of the Glennys' five farms. The pigs are wormed, and then they are ready for an intensive feeding program.

Mr. Glenny says that these pigs will be kept by him for 75-90 days and will go to market at about 210 lb. or more. Total feed cost will be about $16 per pig, or 8½-9¢ per pound for 180 lb. of gain. The veterinary costs on each pig are figured at 85¢, Mr. Glenny reports.

Thus far, Mr. Glenny has brought in 480 Missouri pigs for his own use and has lost only five, which is about a 1% death loss. He attributes the quarantine period, plus the veterinarian service as very important in holding down the death loss, often so high in young pigs.

"I know that some feeder pigs are being bootlegged into these states from other areas," Mr. Glenny says, "but all our pigs are veterinary inspected. It costs us something extra to do this, but we wouldn't operate any other way. We want to build this feeder pig business on a sound basis. Anyone who buys a Missouri pig from us, either as a feeder pig or market weight pig, knows we have

FORMER WATERING TANKS—Thomas Glenny looks over two former stock watering tanks which he has converted to hold bulk feed. Feed can be dumped into these two tanks where it goes down into a hopper and feeding auger. Watering tanks, auger and hopper hold 4 tons.

closely supervised the health and feeding."

If this Missouri feeder pig program grows, as Mr. Glenny expects it will, he may plan to contract with farmers to raise some Missouri pigs for him. He has not yet embarked upon the plan, but it is already worked out by him and Quaker Oats salesmen on a weight gain basis.

"First, I want to get my own operation working smoothly, before I enlarge my marketings of these pigs," says Mr. Glenny.

Mr. Glenny has a large feed storage building and a mill on one of his farms north of Rockford. He sells feed in both bulk and bags. He has four storage bins which hold 25 tons of feed each, and three bins each of which hold 10 tons.

Oats, Corn Production

On his farms, Mr. Glenny raises large quantities of oats and corn. He says that through his hog raising program—2,000 of his own hogs, plus the Missouri feeder pigs—he is able to utilize much of his oats and corn production in the feeding program. And since pigs go to market relatively fast compared with beef cattle, Mr. Glenny says that he makes good short term gains on his investment, quicker than he would on beef cattle or in selling his oats and corn at grain market prices.

"This is one of the ways in which a feed dealer can work out a complete feed operation, raise his own grain and use most of it feeding his own livestock," says Mr. Glenny. "We also sell large quantities of bulk and bag feeds to farmers in this area. Most of them call for the feed they buy, or it is delivered direct."

Many farmers who order bulk feed from Mr. Glenny get it delivered direct from the Quaker Oats plant at Cedar Rapids, Iowa.

Aside from the Missouri pigs which Mr. Glenny raises, he also raises 2,000 other pigs annually. These latter pigs are a cross of York and Landrace pigs with a Burke strain. This has produced a long, meat-type hog.

Mr. Glenny has a very modern and clean sow house, holding 20 sows. These well-cared for sows have litters up to 14 pigs, with a very low disease factor. The brooding house quarters, completely furnished with Hudson equipment, are cleaned daily and often steam cleaned. Mr. Glenny raises some of the young pigs as gilts, but also sells some feeder pigs out of the litters.

Mr. Glenny keeps his herd sows for three farrowings and then they are replaced with his own gilts raised on another farm. Through the farrowing stage, the sows get a ration of oats and sow supplement. The nursing sows get a ration of oats and pig and sow supplement.

He uses Hudson gas brooders in his pig quarters. Technically minded, Mr. Glenny has worked closely with the Hudson firm in developing a highly efficient pig brooder.

At his own farm, where many of his hogs are raised, Mr. Glenny has worked out a very unique and efficient feeding system in a two-story barn structure. The hogs, about 200, are housed in the lower section of the barn, which was once used for dairy cows.

SHOWS LENGTH—Mr. Glenny raises 2,000 pigs of his own annually. They are a cross between a York and Landrace hog with a Burke strain. Mr. Glenny holds such a hog to show the length.

In this lower section, he has a Hudson automatic feeder, 24 feet long and with 36 feed holes. Above this feeder is a metal hopper bin, and this in turn is fed from the upper barn floor, out of two former livestock metal watering tanks. One tank with the bottom cut out, sits atop the other.

With this arrangement, a bulk truck can dump a 4-ton load of feed into the former watering tanks. This is the amount of feed that the tanks, automatic feeder and hopper will hold. "This amount of feed will take care of 200 hogs for seven to eight days," reports Mr. Glenny.

The feeder is also equipped with lights which turn on automatically at night. Thus, pigs can feed at any hour they wish.

Glenny Bros. also feeds 300-500 head of cattle per year and, at present, is also engaged in feeding two cars of lambs. But Thomas Glenny says that the hogs are still the best all-around investment.

On the Glenny farm, there is a corn cracker, plus considerable storage of bulk feeds in a wooden building. Future plans call for the installation of a roller mill and a mixer, says Mr. Glenny.

Kansas Distributor

OAKSHADE, OHIO—Charles Batdorf, Concordia, Kansas, has been appointed a state distributor for Grain States, Eastern Division, Inc., according to William A. Gauntt, president of the Ohio firm.

Mr. Batdorf will sell and distribute G. S. Feed Fortification Products. He formerly represented Hess & Clark, Inc., in Kansas and presently owns and has been operating the Circle "B" Feed & Supply Co., Concordia.

HOPPER—This is the hopper in the converted stock barn below the watering tanks a floor above. This Hudson adapted feeder is 24 ft. long, has 36 feeding holes and is automatic with lights at night.

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Trend Toward Fewer Broiler Growers in East Texas Continues

By Special Correspondent

NACOGDOCHES, TEXAS — The broiler trend in east Texas seems to be following the national pattern—more and more birds being grown by fewer producers. In this area, the number of large owners barely exceeds a half dozen.

"The industry is getting more integrated in this part of the country," said Dick Wright, vice president and manager of the poultry department for the Texas Farm Products Co. "Economics has driven us to it. We have already bridged the gap from hatching eggs to baby chicks by putting in our own hatcheries. The 5-7¢ chicks broke all the independent hatchery owners, so those of us in the business of growing broilers had to put in our own hatcheries."

Most dealers in this area have established their own breeder flocks also, in order to keep an adequate supply of baby chicks and to gain further control of the business.

"The only thing lacking is a processing plant," Mr. Wright explained. "Practically all birds here are sold at the auction in Center, Texas. A good processing plant costs a half million dollars and, with the future outlook not too bright, we just don't intend to spend that kind of money for awhile."

The Texas Farm Products Co. will sell about 6 million broilers this year, which is a slight increase over previous years. The company has enlarged its breeder hen flocks to about 60,000 hens and is currently hatching from 135,000-140,000 chicks per week.

Feed on Contract

The small independent grower has just about faded from the picture in this area, with not over 1-2% of the broilers being grown by farm owners. Many of these small growers are still in business, but they are now feeding birds on contract for the large producers.

"The large company shaves expenses all along the line," said Mr. Wright, "which is why they are still doing business. We are building bigger houses and making a saving there. By controlling the laying of the eggs, the hatching, and then mixing our own feed, we can eliminate a few expenses that the independent grower cannot."

Producers in this area are turning out marketable broilers in from eight to nine weeks and running about four bunches a year through each house. These birds are being marketed at 3¼-3¾ lb. each.

Some dealers say they can grow a broiler for 13½-14¢. This is where everything goes according to plan, because sickness will sharply increase the cost.

"We have been lowering this figure steadily until this last year," said W. B. Sitton, who grows a million broilers a year. "But it hasn't been lowered the last few months, so we may have the irreducible minimum. I think our future progress will be in raising the quality of the birds and making improvements in our marketing system."

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New President Named By Mississippi Chemical

JACKSON, MISS.—Owen Cooper, executive vice president of Mississippi Chemical Corp., was made president of the multi-million dollar company at the recent annual stockholders' meeting.

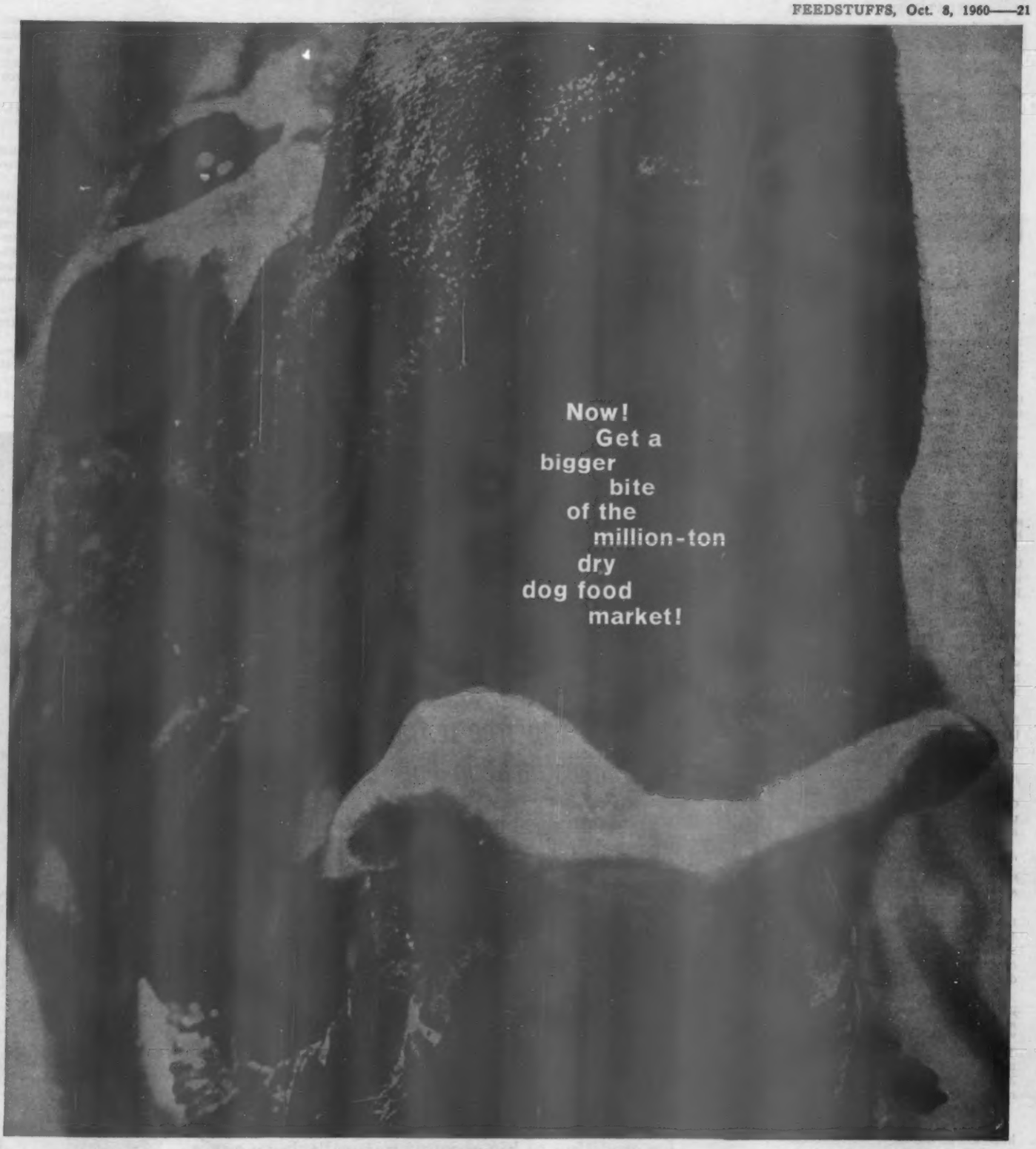
He succeeds Charles S. Whittington, Greenwood, who has served as president for the past 10 years. Mr. Cooper becomes the third president of Mississippi Chemical Corp., a company organized by the farmers of Mississippi for the manufacture of anhydrous ammonia, urea and ammonium nitrate at the Yazoo City plant and mixed fertilizers at Coastal Chemical Corp., Pascagoula.

Other officers named include: LeRoy Percy, Greenville, chairman of the board; Fred A. Anderson, Jr., Gloster, and E. G. Spivey, vice presidents; Mrs. Esma H. Hawks, Yazoo City, secretary-treasurer, and John C. Satterfield, Yazoo City and Jackson, general counsel.

The same group was elected officers of Coastal Chemical Corp., with the exception of the position of secretary-treasurer, with Sue Tatum, Yazoo City, continuing in this office.

Members of the executive committee named were, in addition to Mr. Percy, Mr. Cooper, Mr. Anderson and Mr. Spivey; Frank Allen, Canton; R. D. Morrow, Brandon; Norwood Nichols, Yazoo City; Carl Farmer, Abbeville, Ala., and John Garman, Clarksdale, who succeeds Mr. Whittington on the executive committee.

Mr. Cooper was one of the founders of the chemical company.



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The dog population of the United States is on the rise. So is dog ownership. So, indeed, are your possibilities for profit. Reason? More dogs will obviously require more food. Yet, on the emotional level, more dog owners will require added assurances of quality. To this end, Borden's research and development has produced five remarkable supplements that can help you build a better food formula more economically–and get a bigger bite of this lucrative market.

BORDEN'S MG replaces dried whey on a pound-for-pound basis. Milk and Grain sources of whey factors...condensed whey solubles and fermented corn extractives, corn distillers dried solubles and dried whole whey in a dry free-flowing form. **BORDEN'S MRB replaces dried skim milk on a pound-per-pound basis.** Milk Replacer Base–high in protein and milk nutrients. Condensed whey solubles dried on soy flakes with added soy lecithin...flour like, free-flowing and easy to mix. Also available as HI-FAT MRB with 15% added choice white grease. **BORDEN'S CASEIN replaces high-cost horse meat or meat by-products.** A highly digestible protein of high biological value, comparable to protein in meat. The protein level is 86-88%–milk protein high in the amino acid lysine. **BORDEN'S CP#3 adds palatability and lasting taste appeal.** A standardized blend of cheese scrap dried on a free-flowing carrier. Easy to handle, inexpensive. **BORDEN'S PETPRO supplements cereal-base foods.** This all-in-one supplement contains whey, fermentation factor ingredients, liver and glandular meal, fish meal, fish solubles and all the essential microingredients, plus cheese powder for palatability.

Today's best dog foods are made with Borden's quality supplements.

And remember! Borden's Technical service is available at no charge to help you develop new formulas or improve old ones. Call or write us today for further information.

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JOE BROOKS

BY AL P. NELSON

He Who Sees Usually Believes

Joe, his wife and the twins had just finished their evening meal of roast beef, baked potatoes, relishes, tossed salad, apple pie and coffee when the doorbell rang.

"Who in the world can that be?" muttered Joe. "I was figuring on listening to the ballgame."

Mary rose and went to the door. "Why, Grandpa Hodgkins!" she exclaimed. "How are you?"

"Just fine," came Grandpa's high-pitched voice. "Say, is the best feed dealer in the state in tonight?"

"Who—Joe?" asked Mary winking at Grandpa. "He isn't that good, is he?"

"Well, he isn't any dumbbell," Grandpa said. "He works when he isn't at a Chamber of Commerce or Rotary meeting."

"That's what I call a sandwich compliment," Joe said coming forward. "First you compliment me by saying I'm the best feed dealer in the state, and then you take me down a peg by saying I stay out too long for lunch."

"Well," chuckled Grandpa, "we're all human, aren't we? I never saw a perfect feed dealer. You don't want me to lie to you, do you, Joe?"

"No, sir, Grandpa. And what's on your mind tonight?"

"Problems, Joe, problems," sighed Grandpa. "The folks are in shopping until 9, so I begged them to take me along so's I could talk to you."

"Won't you come in?" Mary asked. "And there's some apple pie left from supper. Would you like a piece and a cup of coffee?"

Grandpa chuckled. "Say, I knew I timed my visit right. Mary, if you insist, I sure will have a piece of that apple pie — maybe with some ice cream on top if you got it. I always did like to eat."

So Grandpa was served his apple pie ala mode and coffee, while Joe sat across from him at the kitchen table. "I feel lots better now," Grandpa said. "We always eat at 5 bells at our place, and I get hungry quick. But, Joe, I'm worried about our feed business."

Grandpa Is Tale Teller

Joe smiled. He liked Grandpa Hodgkins' use of the term "our feed business." The old fellow was Joe's dollar-a-month man. He liked to spend a day at the feed mill once a month buttering up the customers, shaking hands with them, gossiping and telling them tall tales of when Ketchum County was "a pioneering" and men had to be men, or they were finished.

The customers loved it, of course, and often they bought additional merchandise because Grandpa put them in such a pleasant, friendly mood.

"What's worrying you about our feed business, Grandpa?" Joe asked.

Grandpa frowned. "Yeah, that's what I come for, wasn't it? Well, Joe, the other night, the farmer Calkins next to my son-in-law Elmer's place was over visiting. I heard him and Elmer talking out in the yard. Elmer was praising our dairy ration and pig grower, but this Calkins is a sourpuss.

" 'How do we farmers know what feed dealers are putting in our feed?' Calkins says to Elmer. 'Maybe they are putting in stuff that isn't worth much as feed. Maybe we're better off feeding our own grains and roughage.' "

" 'Well, on Joe's registered feeds, the tags say what's in it,' Elmer said, 'and on grind and mix, you got your own grain, or comparable grain bank storage, and you can always watch them dump the concentrate in.' "

" 'Labels don't mean anything,' Calkins said. 'There can be substitutions.' "

Grandpa leaned toward Joe, his false teeth clacking. "Joe, I hope too many farmers don't talk like that."

Joe smiled. "Grandpa, I appreciate your telling me this, but there have been skeptics ever since the world started. A man who's a real sourpuss, like Calkins seems to be, is suspicious of everybody. He won't trust anybody. But most customers believe us, and we believe them. And production results speak for themselves. They show our feed is worth the money."

"I know that," Grandpa said patiently, "but we've got to fight fellows like Calkins."

"How are we going to fight them?"

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Joe asked. "The more you recognize them, the more trouble you often stir up."

Grandpa Has Idea

"Darn it, I got an idea," Grandpa said, "and that's why I come to see you tonight, Joe. What a farmer sees he believes more than what he hears. So, Joe, why can't you make a display of your dairy ration—the 16% mebbe, on a table in the salesroom? Put each ingredient in a little glass bottle and label it. Then the farmer looking at that display can see how many elements go into the ration, according to the label."

Joe's eyebrows lifted. "Not a bad idea, Grandpa. Not bad."

"You don't have to call farmers' attention to the display," Grandpa said. "Just put up a big sign, 'Here Are the Valuable Elements That Go Into Our High Producing Dairy Feed,' and the farmer will do the rest. He'll look at the display, pick up a few bottles and read. Then he'll do his own thinking. I know farmers, Joe. I know them. I was one myself before I retired."

Joe smiled. "I certainly like your idea, Grandpa. We can use it easily and at very little expense. We could follow up with a similar display of our pig grower, too, maybe two weeks later."

"Good! Good! Darn it, Joe. We'll show that Calkins and his kind. The good word will spread through the community. You'll see."

Joe chuckled. "I'll work on it, Grandpa. By the way, the Braves are going to play the Giants on TV in a moment. How about you and me watching it—while we drink a bottle of beer?"

"Hot diggety!" exclaimed Grandpa, his lips working excitedly. "Boy, this is going to be a big night for me. I like baseball, too. And when Elmer and my daughter come to call for me, don't let them drag me home till the game is over."

"I won't," promised Joe. "I'll have Mary make coffee for them. She's got fresh coffee cake, too. That should hold them for a half hour or more."

"Man," said Grandpa, "this is gonna be a night. Mind if I take off my shoes, Joe? I always like to be comfortable watching TV."

Book on Production Of Crops Published

DANVILLE, ILL. — Crop production and the relationships of crop production to farm management as a whole and to the agricultural industry form the theme of a recently published book "Producing Farm Crops."

The book is designed primarily for the high school student interested in agriculture, but, the authors point out in the preface, "It can be used equally well by people of all ages who wish to obtain a knowledge of the fundamentals of growing farm crops efficiently. The principles presented will act as tools in solving the practical problems."

No tables are included in the book, and much of the information that is frequently found in tables has been presented "in easy-to-understand figures," the authors note.

Although the book is adapted to class use, it is believed to be one which farmers and farm owners will want to study and read independently, it is pointed out in the foreword. "It has been kept as free as possible of the tedious characteristics commonly associated with textbooks," say the editors.

Authors of the book are the late Dr. Harold K. Wilson, professor of agronomy, and Dr. A. Chester Richer, professor of soil technology, both of Pennsylvania State University. It is published by The Interstate Printers and Publishers, 19-27 N. Jackson St., Danville. Listed price is $5.75.

SAYS EGG INTERIOR NO YOLKING MATTER

MERIDIAN, MISS. — In a short pungent editorial recently the Meridian Star's editor, James B. Skewes, noted: "Many farmers who specialize in the egg business are worried about sales—too few people are consuming eggs these days. One of the troubles may be with our children. Today's youth often rejects an egg for breakfast in favor of a cereal.

"What the farmer needs is the type of chicken that lays a free prize or coupon in every shell."

Mid-South Shippers Assn. Plans Meeting

NEW ORLEANS—Plans are under way for the winter meeting of the Mid-South Soybean & Grain Shippers Assn. to be held here during the latter part of February. Definite date and other details are yet to be worked out.

Officials of the association announced that the annual meeting will be held Aug. 1 and 2 at the Hotel Peabody in Memphis.

The association also revealed it has three new members, W. L. Richeson & Son, Inc., New Orleans; Planters Sales Co., Memphis, and Miller Grain & Seed Co., Carlisle, Ark.

Join Franchise System

DANVILLE, ILL.—Five independent milling companies have joined the Swisher franchise system of feed mill operation, according to the Swisher feed division of the Wm. Davies Co., Inc., Danville.

The firms are: Ehlers Feed Service, Benson, Ill.; Elburn (Ill.) Feed Mill; Martin Implement Co., Roanoke, Ill.; Sycamore (Ill.) Feed Mill, and Paxton (Ill.) Farmers Grain Co.

Under the franchise agreement with Swisher, these mills manufacture a complete line of Swisher feeds using a special formulation of already mixed vitamins, minerals, antibiotics and other unidentified growth factors in a "super concentrate." The local mill adds soybean meal and grains, locally obtained, to produce finished feeds.

VITAMIN FORTIFY YOUR OWN FEEDS with JERSEE VITA-MIX

Never fails to produce GUARANTEED POTENCY results!

Contains necessary Vitamins, Antibiotics, Amino Acids and Trace Minerals to Vitamin Fortify your feeds for only a few cents a bag.

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A dependable body building feed containing guaranteed levels of Vitamins A-D and Aureomycin. Simple and economical to feed. Assures guaranteed feeding results.

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A COMPLETE MILK REPLACER WITH SWEET MILK SOLIDS — fortified with Aureomycin to help prevent scours and minor digestive disturbances. Packaged in 25 and 50-lb. bags.

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Manure Disposal Poses Problem

The crying need for organic matter and organic plant food on low yielding crop and pasture land while poultrymen in the vicinity suffer headaches in disposal of their manure presents a paradox that future developments must and will solve.

Previous information indicated that fresh poultry manure, when dried and protected against leaching and other losses, contains approximately 4% nitrogen, 2½% phosphorus and 2% potash. Further, when retail prices of commercial plant food are 18¢ lb. for nitrogen, 7¢ lb. for phosphorus and 9¢ for potash, the plant food value of a ton of such dried and protected manure has a value of about $20, allowing for minor losses in drying.

Figures given in the chart on manure production represent potential value under ideal conditions. However, even when reasonable allowance for nutrient losses is made, it is evident that the value of manure represents an item worth serious consideration as a by-product of the meat or eggs produced. Salvaging this by-product, however, presents certain problems of engineering and economics.

Disposal of manure seems to be increasing despite its value. Satisfactory disposal is important to many poultrymen who do not grow crops because of the relation of the manure to general sanitation and control of disease and parasites on the farm. The problem has become acute in certain areas of California, New England, New Jersey, Georgia, Alabama, Arkansas and Maryland.

Apparent answer is development of practical and economical machinery to handle and transport the bulk at costs which will allow a profit.

Increased use of poultry manure by farmers, suburbanites, gardeners, florists and others can be secured only through successfully meeting the competition of manufactured fertilizers.

This requires a processing operation with the following phases:

1. Dehydrate the manure—Drying would be necessary to reduce transportation costs and speed handling. It would also be necessary if the product is to be packaged for retail store sale. Moisture content varying from 70% for fresh manure to 18% for air-dried manure would have to be reduced to 5-7%.

2. Composting—The manure would be piled and aged for several months while bacterial action breaks down the organic matter and litter. Sometimes the piles are turned two or three times during the aging process. During this operation, bacteria cultures as well as supplemental plant food, especially phosphorus and possibly trace elements, may be added increasing the food content. This would also increase the sale value.

3. Pelleting or crumbling—For pellets or crumbles, the manure must be milled (hammermills are being used for this), screened and thoroughly mixed to secure uniform consistency. Any supplementation of chemical plant food may be made at this stage. Delaware experiments show that 25-30% moisture is desired for the pelleting operation, the pelleting being done by the regular feed pelleting machines.

After pelleting the pellets may be run through a crumbling machine as is done in producing crumbled feed.

Pelleting and crumbling increase the cost of the final product and only where special efforts are made to promote the sale of the product can one hope to cover these processing costs and secure a profit.

Solution will come as attention is focused on the problem and more initiative and ingenuity are applied to it by trained engineers and economists.

TABLE 1. Manure Produced by Different Classes of Poultry

No. birds	Type of flock	Lb. manure produced (dry basis)	Time period	Total value	Value per bird
100	Laying hens	2,480	12 mo.	$25.80	$0.25
1,000	Broilers (chickens)	2,625	10 wks. (3.5 av.)	28.13	.028
1,000	Broilers (turkeys)	4,320	16 wks. (8.0 av.)	47.26	.047
1,000	Heavy turkeys	35,000	24 wks. (20.0 av.)	353.26	.37

EDITOR'S NOTE: *Source of information for this article is the Maryland Poultryman, issued by the University of Maryland extension service, College Park, Md. Wade H. Rice, extension poultryman, is editor of the publication.*

TESTS ON CHICKS SHOW THAT *Vitamin A* STRENGTHENS THE BARRIER AGAINST INFECTION

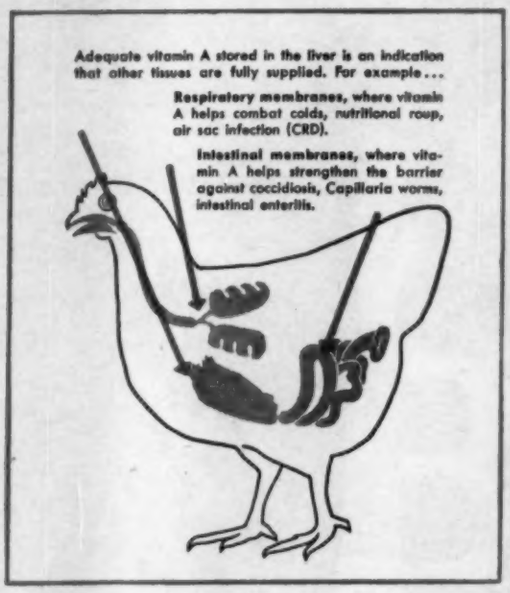
Mucous membranes lining the gastrointestinal and respiratory tracts are the primary barriers which prevent the entry of infective agents into the body proper. Vitamin A is critically involved with the defense mechanism of the mucous membrane. Adequate vitamin A keeps the mucosa healthy, enables the chick to resist infection. Insufficient vitamin A renders the chick liable to infection through both respiratory and intestinal membranes.

Why are liver stores of vitamin A important?

Reserves of vitamin A are the essential safety factor against stress. Reserves are stored in the liver, but only after other tissues are adequately supplied. Therefore, when chicks show good liver storage, it is a sign that other tissues are saturated with vitamin A.

The most effective vitamin A supplement: Nopcay® Type V

Test after test has shown that preformed vitamin A such as Nopcay Type V produces very high liver storage. This means that it protects the mucous membranes and helps combat infections such as chronic respiratory disease and coccidiosis.


Adequate vitamin A stored in the liver is an indication that other tissues are fully supplied. For example...
Respiratory membranes, where vitamin A helps combat colds, nutritional roup, air sac infection (CRD).
Intestinal membranes, where vitamin A helps strengthen the barrier against coccidiosis, Capillaria worms, intestinal enteritis.

SUPPLEMENT YOUR FEEDS WITH NOPCAY TYPE V BECAUSE IT CONSISTENTLY BUILDS UP HIGH LIVER STORAGE LEVELS OF VITAMIN A AND THUS ASSURES THE MOST EFFECTIVE PROTECTION TO ALL OTHER TISSUES

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Research Grants Made For Mastitis Studies

DURHAM N.H.—Research studies on the control and prevention of mastitis among dairy cattle will be conducted by the bacteriology department of the University of New Hampshire here under grants totaling over $108,000. The grants were made available by the National Institutes of Health, U.S. Public Health Service in Bethesda, Md.

During a three-year period, a university research team headed by Dr. Lawrence W. Slanetz will study the nature and characteristics of mastitis staphylococci. Also, the team will further evaluate the efficiency of the staphylococci vaccine developed at the University of New Hampshire and introduced last year.

Dr. Slanetz reported that the vaccine is designed to protect dairy animals through immunization against the "staph" organism, the major problem in bovine mastitis control.

Working with Dr. Slanetz on the research program are Dr. Clara H. Bartley, research bacteriologist, and Dr. Fred E. Allen, veterinarian at the agricultural experiment station.

Approximately one-third of the first year's grant of $36,506 will be spent to purchase a dairy herd of 16 first-calf heifers that are free of mastitis. The remainder will be spent to care and house the heifers in private quarters, and to pay for supplies and additional technical assistance.

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Firm Organized to Process Ingredients

EAGLE GROVE, IOWA—Forming of a business here to process ingredients for feed manufacturers has been announced. The new business will be known as Eagle Mills, Inc.

The firm will process meat scraps, tankage and fish meal, according to Gordon E. Hoath, president. Mr. Hoath recently resigned his position as manager of the Consumers Cooperative Assn. fertilizer and rendering plants here.

The new firm's articles of incorporation call for total capitalization of $200,000. A separate property holding corporation, North Central Properties, Inc., capitalized at $100,000, has let a contract for a 40 by 140 ft. steel building to be erected for the new business.

Occupancy of the new building is scheduled for Nov. 1. Automatic processing equipment with a capacity of over 40 tons of ingredients per day will be installed.

Officers of both corporations are: Mr. Hoath, president; Ed Ellsworth, vice president, and Dr. G. B. Hogenson, secretary-treasurer.

Dryer Distributor

MINNEAPOLIS — Pacmac Machinery & Merchandising Co., Inc., Cubao, Quezon City, Philippine Islands, will handle the sale of Arid-Aire grain dryers in the Philippines. This announcement was made by Mr. A. C. Bredesen, general manager of Daycom, Inc., manufacturer of Arid-Aire grain dryers.

F. V. Cornell completed the negotiations for the Philippine concern. He reported that all models of the Arid-Aire dryers will also be distributed through the Pacmac branch office in Manila. Mr. Bredesen said Arid-Aire dryers are used in the Philippines principally for drying palay (unhulled rice) and corn.

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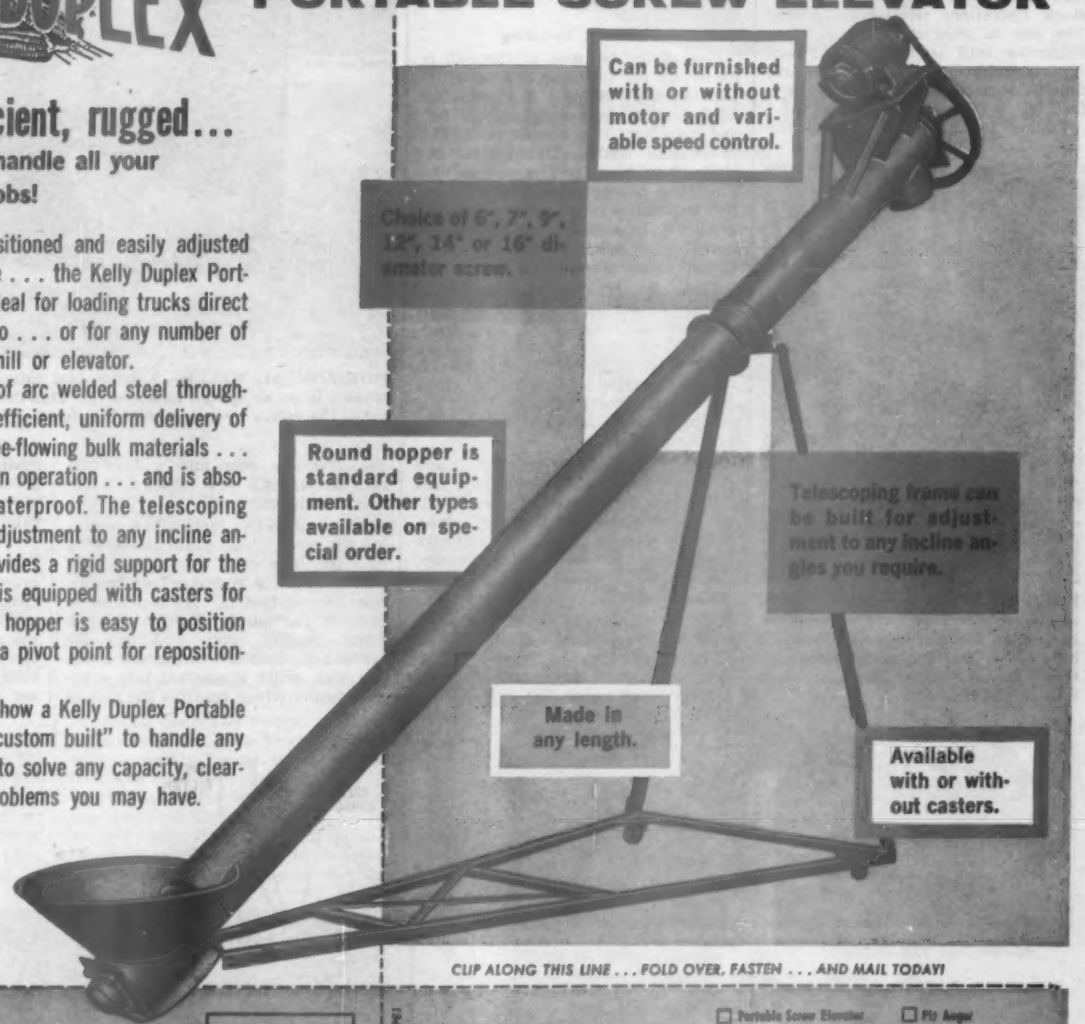
Ruggedly constructed of arc welded steel throughout . . . it assures you efficient, uniform delivery of grain and all types of free-flowing bulk materials . . . is smooth and noiseless in operation . . . and is absolutely dustproof and waterproof. The telescoping frame can be built for adjustment to any incline angles you require . . . provides a rigid support for the conveying tube . . . and is equipped with casters for easy moving. The round hopper is easy to position . . . even when used as a pivot point for repositioning the discharge.

We'd like to show you how a Kelly Duplex Portable Screw Elevator can be "custom built" to handle any number of jobs . . . and to solve any capacity, clearance or incline angle problems you may have.

Check and mail card today for literature and full details.


Can be furnished with or without motor and variable speed control.
Choice of 6", 7", 9", 12", 14" or 16" diameter screw.
Round hopper is standard equipment. Other types available on special order.
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FEEDSTUFFS

All Types of Pelleted Livestock Feed Produced at Oregon Mill

An Oregon feed and livestock man decided that he wanted a new plant which would produce roughage pellets and complete-ration pellets for beef cattle and lambs, plus pelleted feeds for swine and dairy cattle.

He went ahead with a mill designed for this specific purpose, and what he now has is a mill which has been described as an unusual and simple low-cost installation which will turn out any type of pelleted livestock feed at a low labor cost. Another special feature is that the mill, located inside the city limits, is practically dust-free.

This new plant is that of Womco Mills at Prineville, Ore. It is located in an area which is expected to be increasingly important in alfalfa production through irrigation made possible by building a new dam.

The mill is owned by Ed Albertson of Philomath, Ore., who also has a feed plant in Philomath, plus livestock operations near both plants. The sale of production through the Prineville mill is handled for Mr. Albertson by Ochoco Feed & Farm Supply, located adjacent to the new facility.

Pellets for livestock men in the Prineville area are manufactured and custom-made at the new plant. Also, it turns out feeds for some of Mr. Albertson's own livestock operations, including 1,000 head of cattle and 10,000 lambs at Silver Lake. Another activity is production of hay pellets for transport 100 miles across the mountains to the Philomath plant; it has been found that savings in transportation costs through pelleting more than offset the pelleting expense.

The new Womco mill, built at a cost of some $100,000, can be operated by just two men. It has a pelleting capacity of about 4 tons per hour on straight hay pellets and 5-6 tons per hour on hay-containing complete pellets for ruminants. Pellets without hay also are produced at the mill.

A typical complete ration for cattle contains 25% concentrate (mostly barley), 5-10% molasses and 65-70% hay.

BALE CONVEYOR — This picture shows the Jacobson bale conveyor on an incline feeding into the Jacobson bale buster and 140 h.p. hammermill. Grain from overhead bins also is fed into the hamermill.

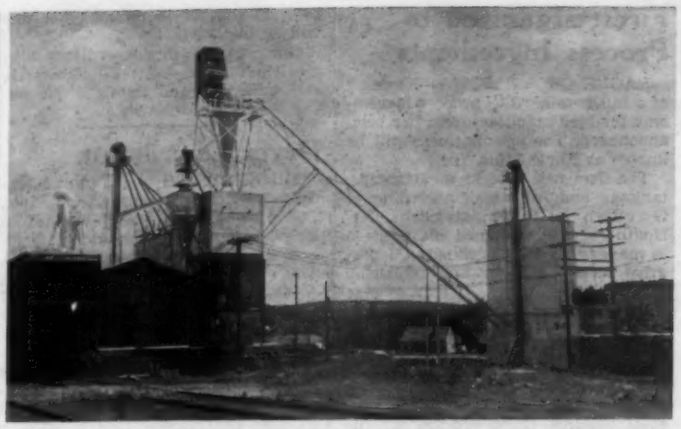
Blending, Pelleting

One of the features of the mill is its set-up for blending and pelleting the livestock rations. A continuous mixing screw below the ground hay and ingredient bins also serves as the pellet mill feeder. This system includes four bins for ground hay and grain and concentrates, plus a feeder for antibiotics and other micro-ingredients. In addition, there is a horizontal batch mixer for preparation of special mixes used in the rations.

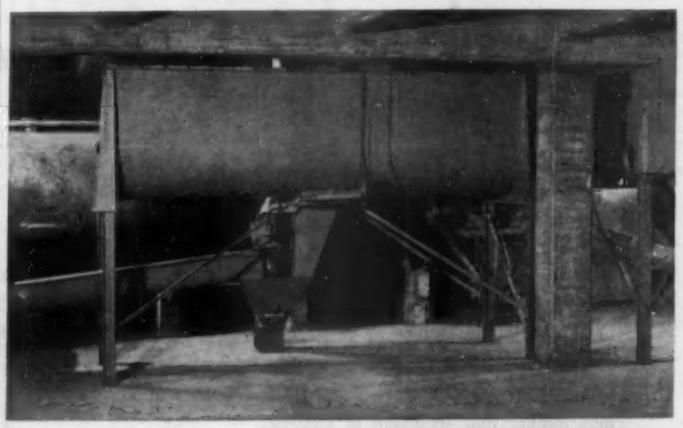
Designing, building and furnishing the equipment for the Prineville mill was Larson & Baardson, Inc., a design and equipment firm which has its home office at Portland and a branch office at Seattle. In addition, this firm fabricated some of the facilities, including screw feeders and certain other equipment.

Specializing in roughage pellets and complete pellets containing hay, this mill has a special hay grinding facility adjacent to the pelleting plant. Part of this is four grain storage tanks over the hammermill set-up; these are Butler 8 x 8 ft. square tanks holding 35 tons each.

Hay from storage moves on a 50-ft. bale conveyor which controls the flow of baled hay into the grinding facility; for example, the conveyor can be set for grinding of 300 lb. per minute. The hay goes into a Jacobson bale buster and then into a 150 h.p. Jacobson hammermill.



WOMCO MILLS—This is a view of the Womco Mills hay and complete ration pelleting plant at Prineville, Ore. On the right is the hay and grain storage and grinding facility. In the center of the photo is the pipe from the hammermill to the collector and the pipe for recirculating air back to the hammermill. The collector discharges into four bins, all with feeders which discharge into a collecting screw which feeds the pellet mill directly. The feeders have variable speed drives for a continuous blending operation.



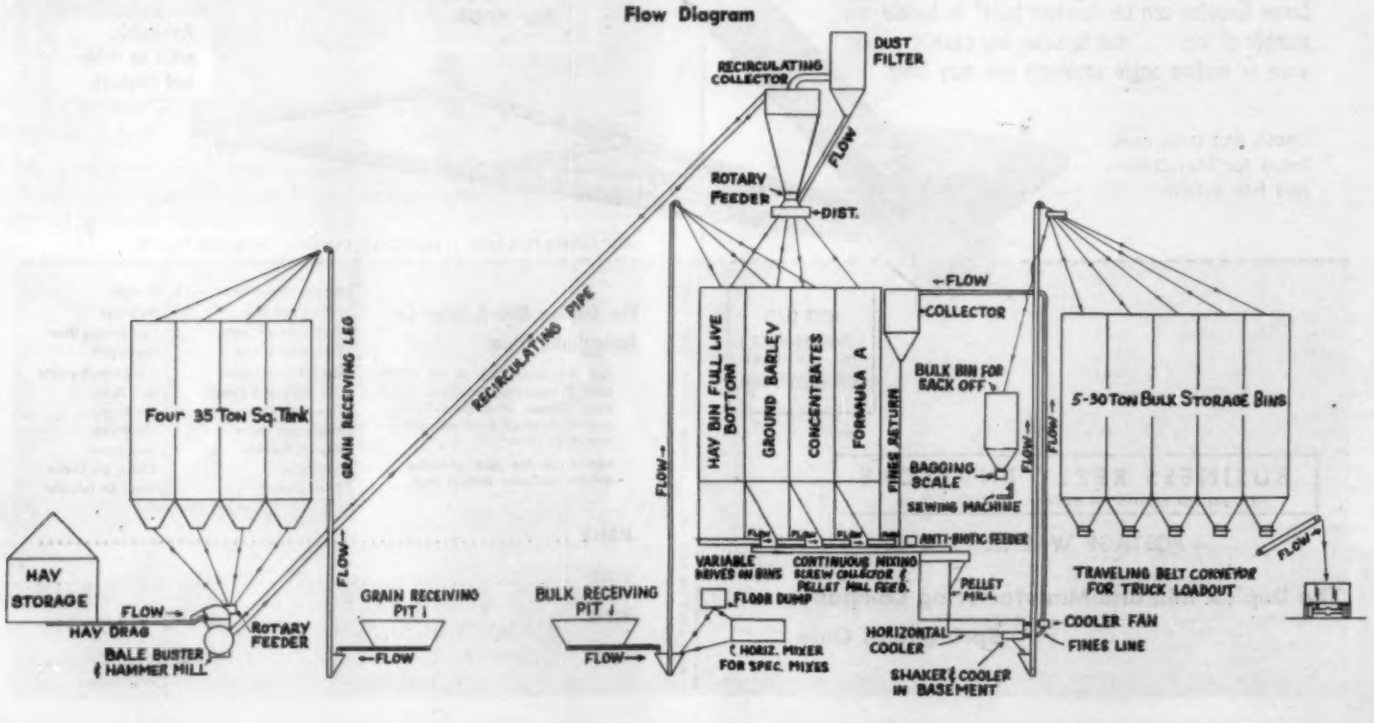
HORIZONTAL MIXER—A horizontal mixer located below the plant floor is used to make special batch mixes. This discharges to an elevator leg which takes the mixes to any of the bins ahead of the pellet mill.

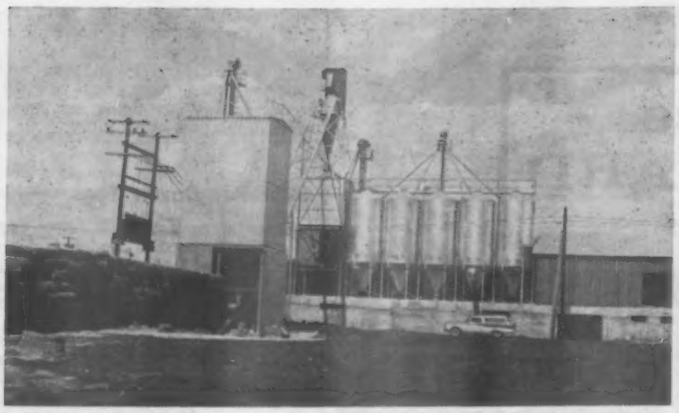
Adjacent to this facility is a receiving pit from which grain is elevated into the bins over the hammermill. One tank is for Womco's own barley, one for customers' grain which is brought in, one for Ochoco Feed & Farm Supply grain and one for screenings, corn or other grain. From the bins, grain is spouted into a rotary feeder which controls the flow of grain into the mill. Grain can be ground along with hay, but usually the two materials are ground separately.

Little Dust Loss

From the hammermill, ground grain and hay are blown to a recirculating collector above the bins in the pelleting plant. In addition to the pipe carrying material to the collector, there is a second pipe for recirculating air back to the mill. The net result of the system is assurance

Flow Diagram





FRONT VIEW—This is a front view of the Womco plant, with the hay grinding facility on the left and the bulk pellet bins on the right. A traveling belt conveyor on a track can move bulk materials from any of the five bins directly into a truck.

of practically no dust loss, say the plant operators.

Material from the collector discharges through a distributor, and then into any of four bins ahead of the pellet mill. These are 6 x 6 square bins, each 20 ft. high. One bin, for ground hay, has a full live bottom feeder, and the other three bins have hopper bottoms and screw feeders. The feeders have variable speed drives for percentage feeding in prescribed amounts into the mixing screw. This continuous mixing collecting screw also serves as the feeder for the pellet mill. The four bins contain ground hay, ground grain, concentrates and special mixes.

The pelleting operation is in a 30 x 60 ft. building with a concrete floor and basement. This is joined by a 40 x 40 ft. building for sacked material storage.

Adjacent to the pelleting facility is a meal receiving dump pit, from which protein meal or supplement is conveyed and elevated into the plant bins.

From floor level, the mill operators can dump materials into a horizontal mixer below the floor in the basement. This mixer is used for blending special mixes for hog rations or dairy rations or other feeds. From the mixer, the feed discharges to the same leg used to receive bulk meal and concentrates, and then it is elevated to one of the bins for mixing with hay or grain to make complete pellets.

There are check-weighers on the bins to check the discharge from the feeders into the collecting screw.

Micro-Ingredients

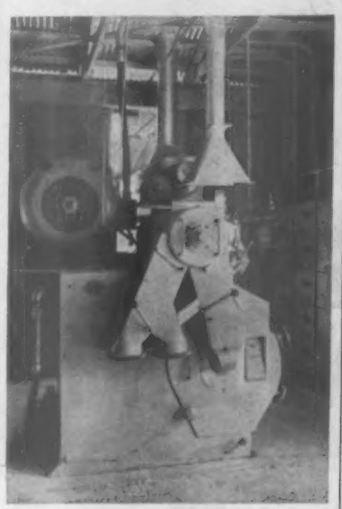
Also part of the system is a feeder for adding micro-ingredients to the mixing screw collector which feeds the pellet mill.

With the facilities, the operators note, the plant can make any type of livestock pellet and do it with a minimum amount of equipment and labor. One man handles grinding and receiving, while another runs the pelleting plant. Most of the output is in bulk, but there also are facilities for sacking feed.

The straight or blended materials are fed into a 100 h.p. Wenger pellet mill which is used to make both the roughage pellets and complete pellets. From 5-10% molasses is added to feeds at the pellet mill.

All controls for the pelleting plant are on an electrical control panel on the wall. This has light indicators and

(Turn to **OREGON MILL**, page 84)



PELLET MILL—Here is the 100 h.p. Wenger pellet mill, fed by the screw extending from the feeders attached to the overhead ingredient bins. The unit is used to make both hay pellets and complete-ration pellets of various types for livestock. Part of the electrical control panel is shown on the right; this has light indicators and ammeters to show the flow of materials through the plant.

HORIZONTAL COOLER—Pellets are cooled on a 30-ft.-long Wenger horizontal cooler in the basement. The cooled pellets discharge into a shaker. Fines are returned directly to the cross conveyor feeding the pellet mill, and pellets are taken by bucket elevator to the sacking bin or to any of five bulk load-out bins.

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Hog Raising Factors

Three factors—shelter, water and feed—aid efficient production of market hogs during winter months. Dick Hollandbeck, Purdue University extension swine specialist, says hog raisers must give each factor consideration if hogs are to make the greatest gains during cold weather.

It is neither necessary nor recommended that hogs be kept in a tightly closed building, the specialist commented. They will stay healthier and freer of respiratory diseases if provided dry and draft-free sleeping quarters where there is ample bedding. Ground corn cobs make suitable bedding for shoats.

Even during the coldest period of winter, water is an important part of the hog's ration. Hogs will drink about 2 lb. of water for each pound of feed eaten, Mr. Hollandbeck explains. Clean, fresh water which will not freeze can be provided with automatic fountains or other types of waterers.

Pigs weighing less than 100 lb. and not on pasture, as is the case in the winter, should receive 16% total protein in their ration. The protein content can be reduced to 14% for hogs over 100 lb. Mr. Hollandbeck adds that hogs should have access to a self-feeder or box containing salt and a mineral mixture at all times.

◆

Cost Per Dozen Eggs

Hens laying larger but fewer eggs require more feed to produce a dozen eggs than pullets laying smaller eggs at a higher rate, according to Carl O. Dossin, extension poultry specialist at the Pennsylvania State University.

He suggests that poultrymen work out, at regular intervals during the year, the number of pounds of feed to produce a dozen eggs from each age group. Multiplying pounds by price per pound of feed will show feed costs per dozen eggs. During periods of low egg prices birds in production 12-15 months or longer may not be profitable to hold.

◆

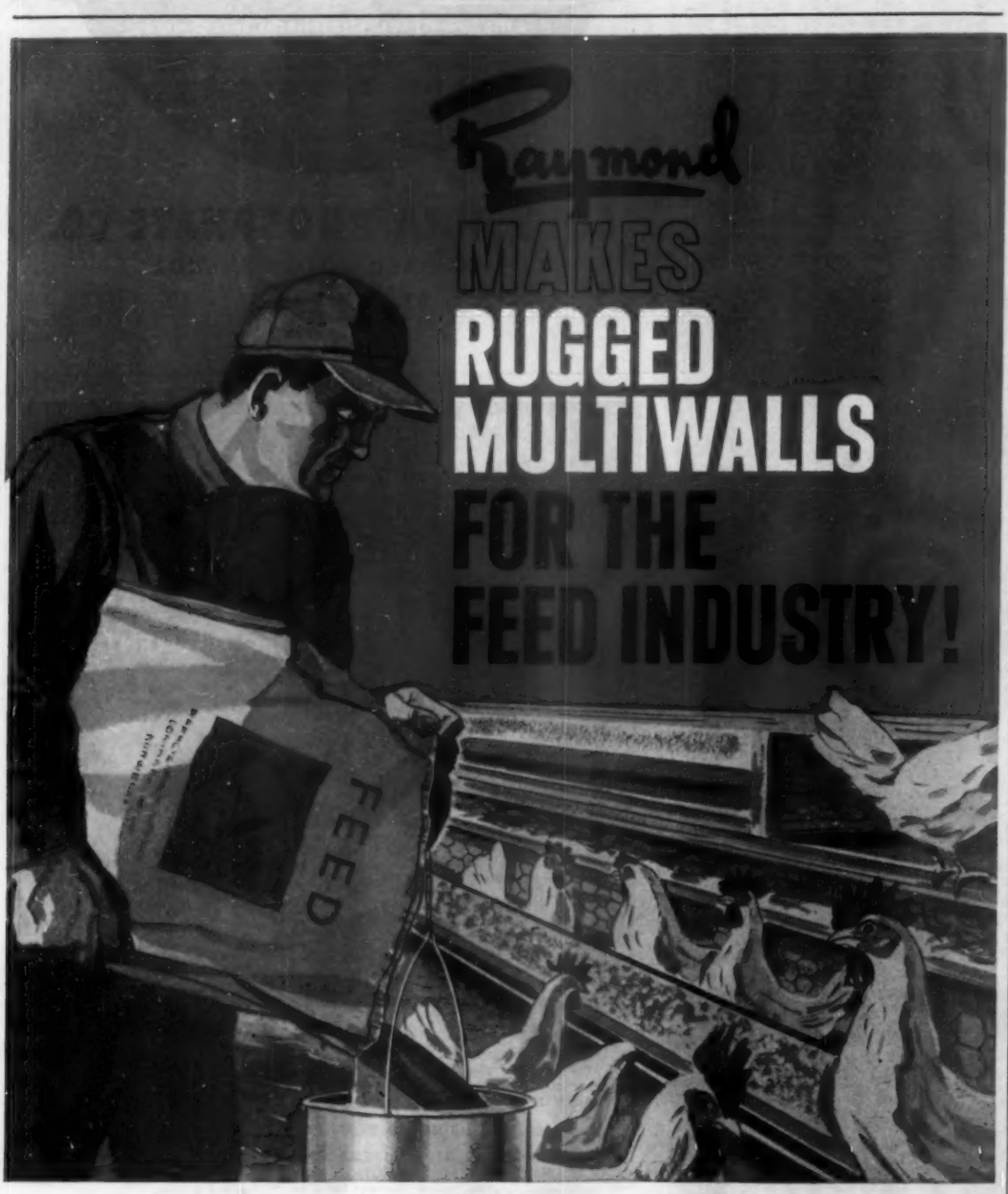
Size of Dairy Herd

The dairyman with a herd of 20-30 cows still receives a relatively favorable return under present economic conditions, according to Richard Wheeler, Michigan State University farm management specialist.

Farm account records for 1957-58, Mr. Wheeler reported, showed generally higher labor incomes for the specialized dairymen with 35-90 cows as compared to those with herds of fewer than 35 cows. But size alone was not the single factor, he emphasized, as net incomes varied widely within each of the herd-size groups.

Some dairymen with small herds reported labor incomes of over $8,000 while several large herds over 50 cows were actually operating at a loss, he pointed out. Records on 172 farms showed a two-year average labor income per operator of only slightly above $3,000. Mr. Wheeler stressed that this figure would be even lower if these dairymen had to replace their investments in land, buildings and equipment at today's prices.

Dairymen in each herd-size group



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may have important opportunities in raising income through adjustments in crop production, feeding, herd selection and management. Such changes, Mr. Wheeler summarized, may offer more promise than large, new investments for herd expansion.

At present milk prices, he concluded, the operator of the well-managed dairy farm with 20 to 40 cows can continue to be a real tough competitor in producing milk at low cost.

◆

Turkey Broodiness

There's a practical, quick way for commercial turkey raisers to break up broodiness in their flocks, according to University of Wisconsin poultry specialists.

"Just put the broody hens in a well-lighted, completely shielded pen for 24 hours. This works better than the present method of 'broody pens' because it's quicker and requires less total floor space," according to Dr. F. L. Cherms, Jr., and R. W. Haller.

"Flock owners with broody pens can cover them up and install a light —one 150-watt bulb for each 16 sq. ft. of space, hung about 4 ft. above the floor. The pens are just as big as broody pens," the researchers explain, "but the hens aren't in them so long, so you don't need as many pens."

The lighted pens break broodiness in about one day, compared to the three to seven days required by the present method. The hens come back into production within 12 or 14 days —slightly faster than with present methods, it is reported.

Some commercial breeders have as much as 10% of their flock broody at one time, the poultry specialists say. Since it takes about two weeks for hens to come back into production after broodiness is broken, it's very important to break them quickly.

There's also a good chance that hormone injections will help, according to reports. Gonadotropins, hormones produced in the pituitary gland, seem to do just about as well as the 24-hour light treatment. These hormones aren't commercially available as diethylstilbestrol and progesterone are, but they are more effective for breaking broodiness.

The injection procedure would require less handling of the birds and flock owners wouldn't have to use valuable space for broody pens. If the technique proves practical, the needed hormones will probably become available through commercial channels, the researchers say.

◆

Proper Grain Storage

Grain farmers have been advised that insects will damage much of their stored grain if preventive measures are not taken before storage, according to C. F. Garner and R. L. Ridgway, extension entomologists at Texas A & M College.

One of the first requirements for proper grain storage is the use of adequate storage facilities, the specialists say. Grain storage structures should exclude all outside moisture and they should also be easily accessible for inspection and fumigation of the grain. Bins in which grain can be aerated are helpful in cooling or drying grain.

No matter how well the storage facilities are constructed, they cannot protect the grain unless they are clean. Before they are used, bins should be cleaned thoroughly of all waste material and sprayed with a residual spray. Old grain, trash or other debris furnishes excellent living quarters for insects, the entomologists continue. The specialists point out that good housekeeping practices in and around grain storage bins will aid in eliminating insect infestations.

Malathion has been approved for use in stored grain as a protectant against insects. The specialists report that a tolerance of eight parts per million has been established. If this chemical is applied before the grain is placed in final storage, it will greatly reduce the possibility of insect damage, the entomologists say.

Hudson Pulp & Paper Names Product Head

NEW YORK—Howard Brody has been appointed product manager of Hudson Pulp & Paper Corp.'s multiwall division, according to an announcement from Benjamin Danziger, manager—administration and market planning of the division.

Mr. Brody, formerly assistant to the sales manager of the division, has been associated with Hudson for three years where he has had a wide range of experience in the sales, marketing and technical problems of the multiwall industry.

In his new capacity, he will be responsible for keeping abreast of all developments in the multiwall field and for coordinating Hudson's continuing effort to find ways best to meet its customers' packaging needs.

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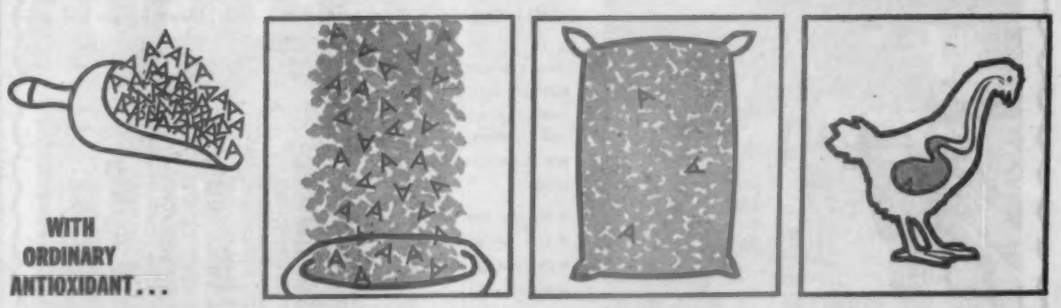

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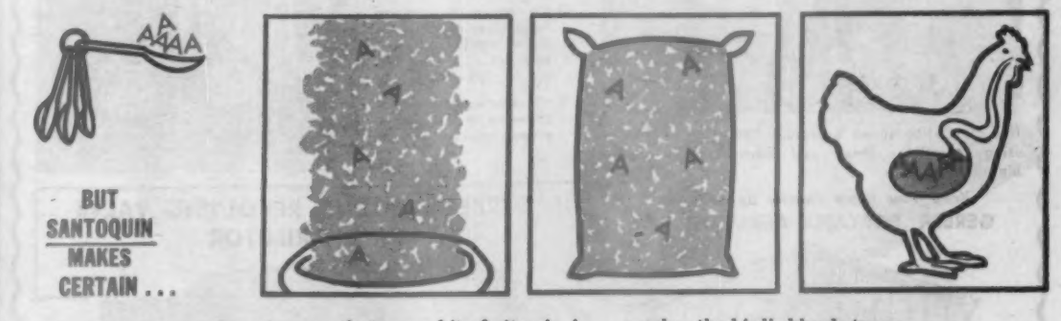

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Vegetable, Animal Fats Used To Add Energy to Beef Rations

By Jess Blair
Feedstuffs Special Writer

The addition of fats to beef cattle feed has spread over many areas of the West particularly California. This practice consists of adding from 1 to 4% of vegetable or animal fat to the feed.

Though fat feeding is being used now only in some of the larger feedlots, many people are showing interest in it. Within recent months, several feed mills and feedlots have installed holding tanks so that fat may be included in the ration.

The two main fats being used in California are cottonseed and soybean oils. There is no particular advantage these oils hold over other kinds. They simply are more plentiful and the price is lower in this state.

These feedlot owners using extra fat feel it is an economical source of energy feed and are satisfied with results.

In the Imperial Valley, a few feedlots have started including fat in the ration. Dan Cameron, nutritionist for the Orita Land & Cattle Co. at Burley, Cal., says: "In our feedlot we are using a combination of vegetable and animal fats and feel it's doing a good job for us. Most of the feeders have complete tanks and use from 2 to 4% fat in the ration. After heating it is pumped into the mixer with the other feed."

FATS IN BEEF RATIONS—Carl Jorgensen (above), manager of the Ogden Commercial Lots in Ogden, Utah, was a pioneer in the feeding of fats while managing a feedlot in California. The idea of adding from 1 to 4% vegetable or animal fat to a feed is spreading rapidly over the larger feedlots in the west. The two main fats in use in California now are cottonseed and soybean oils.

One man who has had considerable experience with fats is Carl Jorgensen, who recently transferred from a feedlot in California to Ogden, Utah, where he is manager of the Ogden Commercial Lots.

"We had been using fats in California for some time," said Mr. Jorgensen. "The main advantage seems to be in that old yardstick that every feeder uses—the price. If fats can be bought at a price that doesn't exceed 2¼ times as much as the cost of barley per pound, it will pay off.

"Most of the fats we used cost from 5½ to 6¢ per pound, and came as a by-product of soap-making. Where a feeder lives a long way from such factories, the price might become prohibitive."

Mr. Jorgensen said that he prefers vegetable to animal fat "because the animal fat may develop a rancidity that livestock do not like."

A feed salesman in California agrees with this, and says too much animal fat will depress the bacterial action in the rumen and slow down digestion. This salesman does think, however, that animal fats improve the steer's hair coat and can have a favorable effect on the buyer.

One rule followed by most feeders is that for each half pound of fat added to the feed the animal will eat a pound less of feed per day. By using 4% fat in a high grain ration, a steer eating 25 lb. per day normally would reduce his intake by 1 lb.

There are some other advantages and disadvantages, according to Mr. Jorgensen. The presence of oil helps lubricate machinery. The fat also provides a good dressing for the feed and sticks it enough so that the fine particles will not blow out of the troughs. One main drawback is the chore of cleaning the tank, according to Mr.

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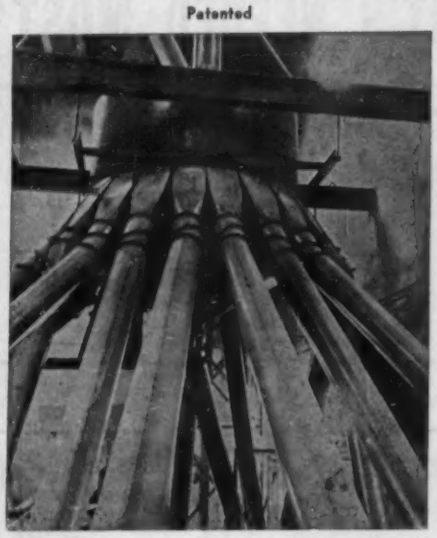

This illustration shows a typical Roto Flo installation using reversible elbows and Gerber's high quality bin spouting.

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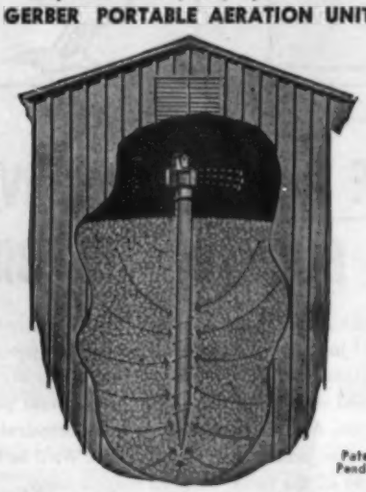

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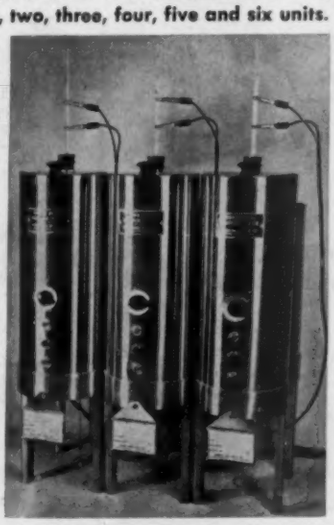

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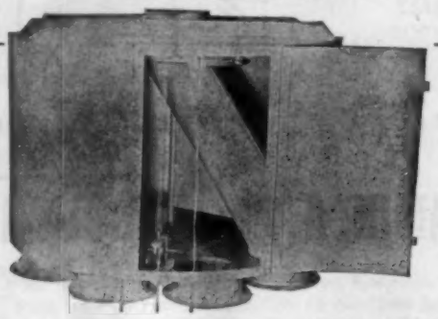

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Jorgensen, who says this can be pretty difficult.

In feeding fats, the mill owner must have a tank of some sort. Most fats must be kept warm. With an insulated tank, the fat can be kept at a higher temperature with less heat being applied. Though this will vary, some mills find that 100 degrees is about optimum for most of the vegetable oils.

Most feeders prefer to insulate the tanks and pipes. This is true even in central California where temperatures are much higher than in most areas of the country.

Fats are often fed in conjunction with molasses. They are blended together as they are pumped into the feed mixers. Some mills use almost the same kind of equipment for molasses and fats, since they must be heated and pumped into the mixers in much the same manner.

One large company that uses fats in most of its beef cattle rations is the Madera Milling Co. of Madera, Cal.

"In selling our products to feedlots, we recommend a high energy feed containing about 1% fat," said J. F. Simonet, the senior partner of the firm. "It has been our experience that a good feed is composed of many things. Each additive has some use, but there is usually too much optimism about them when they are new."

Not so much is known about the dressing percentages of cattle given fats during the finishing out period. Packers have released very little information.

Most feeders think that the inclusion of fat has very little effect on dress-out percentages. It has about the same function as carbohydrates, with more than twice the calories. Therefore, in using a high-grain ration, these mills reduce the grain at a two to one ratio when fat is included.

The Madera Milling Co. is using a process whereby the fat globules are broken down into smaller particles, much the same way that milk is homogenized.

"In this form, the animals can assimilate the fat more easily," said Mr. Simonet. "In a mixture with molasses, we have found that 6% molasses and 1% vegetable or animal fat makes a good combination. We also find that our liquid supplement can be fed in two ways—mixed with grain and other ingredients, or fed free-choice to ruminants."

Thus far, the use of fats has been confined to beef cattle, though it may be tried on feedlot lambs. Dairymen have been using higher energy feeds the last few years, but fats have not normally been included in the ration.

Utah Study of Turkey Disease Announced

LOGAN, UTAH—In an effort to further reduce the losses from disease in turkey production, the Agricultural Experiment Station at Utah State University here is conducting studies to treat and prevent staphylococcal infections, it was announced.

Under a grant-in-aid from American Cyanamid Co., researchers are evaluating the effect of a new drug against experimental and field staphylococcal infections. The studies are under the direction of Dr. Ross A. Smart who is using several strains of staphylococci to produce disease conditions.

Staphylococcus germs are widely distributed and are found in many places in nature . . . in soil, water, air and on the surfaces of plants, birds and animals. It is not known how they gain entrance into the bloodstream of turkeys to cause disease, but it is thought they enter via injuries or mosquitoes.

The staphylococcal infection, synovitis, can create serious losses in turkeys. This infection is more prevalent in large tom turkeys but someties occurs in hens and small-type varieties, according to the report.

JOINS POULTRY FIRM

DANVILLE, ARK. — Leon Brady, former extension poultryman, has joined Joe Ray Enterprises here to work with breeder flocks. Mr. Brady is a graduate of the University of Arkansas.

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VISITS EXECUTIVES—E. de Thieulloy, center, French feed man who visited O. A. Cooper Co.'s Nebraska mills recently, chats with two of the firm's executives. At the right is Guy Cooper, Jr., president of the Cooper firm, with H. K. Seits, vice president, at the left.

French Feed Man Visits Mills in U.S.

BLAIR, NEB.—The exchange of letters over the past three years has resulted in a visit of E. de Thieulloy, Vannes, France, feed man, to O. A. Cooper mills.

Mr. de Thieulloy was sent over here to study the sales technique on promotion methods and customer and dealer education procedures of the O. A. Cooper Co. at Humboldt, Beatrice and Cozad, Neb. He learned through his correspondence with Dewey Nemetz, division sales manager at Blair, that the Cooper mills were comparable in size to his Guymarch Feed Mill in Vannes.

The O. A. Cooper Co. first learned of Mr. de Thieulloy from an article in Feedstuffs in 1957. Mr. de Thieulloy requested a "pen pal" who might be interested in exchanging feed sales and promotion information. Mr. Nemetz responded.

Since that time, Mr. de Thieulloy and Mr. Nemetz have corresponded regularly and have exchanged information on the feed business.

Mr. de Thieulloy is in charge of education and promotion with the Guymarch Feed Mill and has been with the firm for eight years. He revealed a good deal of information about the French feed industry and French agriculture in general during his visit.

About 80% of the feed Guymarch produces is broiler feed. It is sold by salesmen direct to the user. Brittany, the province in which Vannes is located, currently produces 50% of the broilers produced in France. The broiler expansion is continuing in Brittany. As far as other animals are concerned, there are only some dairy cattle and a few hogs in Brittany.

The French people want a white-skinned fowl only, Mr. de Thieulloy indicated.

The Guymarch mill produces both pellets and crumbles. They deliver in 100-lb. paper bags by truck. Bulk in France is still non-existent.

Mr. de Thieulloy also reported that no stilbestrol can be used in France and little urea is used, although not prohibited.

He said that a feed firm that is just normally aggressive can expand now in France, because the market is expanding and the standard of living is rising a bit. Methods in agriculture are being modernized. France is currently getting most of its knowledge of advanced broiler husbandry from Great Britain but both France and Britain look to the U.S. for better breeding lines, he added.

Mr. de Thieulloy's itinerary included stops in Nebraska at Omaha, Blair, West Point, Oakland, South Sioux City, Norfolk, Plainview, Fremont, Central City, Grand Island, Cozad, McCook, Hastings, Beatrice, Lincoln and Humboldt.

While at Humboldt, he conferred with Guy Cooper, Jr., president of the Cooper mills and H. K. Seits, vice president in charge of sales and promotion for the Cooper company, over the weekend. He attended a two-day sales meeting of all Cooper sales personnel at which he heard a briefing on the Cooper fall sales promotion.

Mr. de Thieulloy ended his visit to Nebraska with a visit to the Nebraska State Fair at Lincoln.

PROTEIN BLOCK MACHINE—Dewey Nemetz, division sales manager for O. A. Cooper Co., Blair, Neb., shows the new Cooper protein block machine to E. de Thieulloy, Frenchman who visited the firm.

New Constitution Adopted by Canadian Feed Manufacturers

TORONTO—A "broader, more timely and effective" constitution has been adopted by the Canadian Feed Manufacturers National Assn.

One of the features is a change in name. The group had been known as the Canadian Feed Manufacturers National Council.

The objects and purposes of the association, as listed in the constitution, are:

"(A) To promote, foster and develop the Canadian feed manufacturing industry.

"(B) To act on behalf of the industry in the promotion of a prosperous agricultural economy in Canada.

"(C) To coordinate the aims and objects of the divisional associations on those matters which have national significance.

"(D) To serve as a central point for coordination and dissemination within the industry of information concerning improved methods of manufacture and distribution.

"(E) To promote improved business practices throughout the industry.

"(F) To cooperate with and assist other organizations having similar objectives which are now or may be established in Canada or any of the provinces thereof or elsewhere."

The constitution adds that in accomplishing these objectives and purposes, "due consideration shall be given to divisional variations but, nevertheless, the national outlook shall always be maintained."

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Rapid Change Matches Rapid Growth Of Georgia's Broiler Industry

ROCK EAGLE, GA. — "Rapid change has taken place along with the rapid growth of the broiler industry in Georgia," according to Ralph D. Mobley, director of the broiler and hatchery department of the Cotton Producers Assn., Atlanta.

Mr. Mobley spoke on the "Organizational Structure of the Broiler Industry in Georgia" as part of the fifth annual Georgia Poultry Institute (Feedstuffs, Sept. 24).

"Ten to 15 years ago each phase of the broiler business was operated by separate individuals or businesses with each financing his own operation and each taking the risk of making or losing money," he said. "Today most of the broilers are produced and marketed by integrated organizations having complete control or partial control of the business from the hatching egg producer to the marketing of the broilers."

Mr. Mobley commented that during the last year there have been numerous feed mills, hatcheries and poultry processing plants joining together or integrating their businesses with the following purposes: "To try to stay in the broiler business, to have an outlet for their product, to be able to obtain a supply of broilers to operate their plants, spreading the risk of broiler production to include hatchery, feed mill and poultry processing plant, and to obtain volume so that cost per unit would be in line with competition."

He predicted that in Georgia and other broiler areas there will be more mergers, thus fewer and larger organizations.

Fits Farmers' Needs

He attributed the growth of the broiler industry in Georgia to its fitting the needs of the farmer with a small acreage of land. He said the main criterion for successful location of the industry is the need of the area and he indicated the small Georgia farmer still needs the broiler industry.

Mr. Mobley said it is up to the farmer to decide if he will compete. He indicated the farmer can cooperate with other farms or join a vertical or circular integration system.

He outlined the operations of his organization, Cotton Producers Assn., in the broiler and hatchery business.

He said that all hatching eggs are produced by members located near CPA hatcheries. Most of the eggs are produced under contract with members. CPA owns five broiler chick hatcheries with a capacity of 600,000 chicks a week.

CPA also works with local agencies and several direct agencies for supplying chicks and feed to contract growers. The weight-feed conversion contract pays the grower according to how efficient he is in growing out the broilers. Mr. Mobley commented, "We have a large number of broiler grower members who do an outstanding job of producing broilers."

Operates Two Feed Mills

CPA operates feed mills at Flowery Branch, Ga., and Guntersville, Ala., under management contract to Cooperative Mills, Baltimore. Feed is delivered by bulk truck from the mill direct to the firm.

CPA owns poultry research and evaluation farms along with several other regional cooperatives.

Three poultry processing plants with a capacity of over a million birds per week are operated by the cooperative. It also operates a poultry by-products plant to process offal and make feather meal.

Mr. Mobley further commented, "Today the broiler industry in Georgia faces many problems. The organizations that lead this industry during the years ahead will not only have some form of integrated ownership, but will also have integrated effort of specialists to help cope with these problems. In the future, we believe the most progressive poultry organizations will have specialists within the organizations or through some cooperative effort obtain the services of these specialists. This is being done to some extent today but we believe it will be more important in the future."

Those specialists would be in the following fields, according to Mr. Mobley: Disease prevention, poultry houses, broiler contracts, market research, finance and credit control and management.

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(Turn to page 36)

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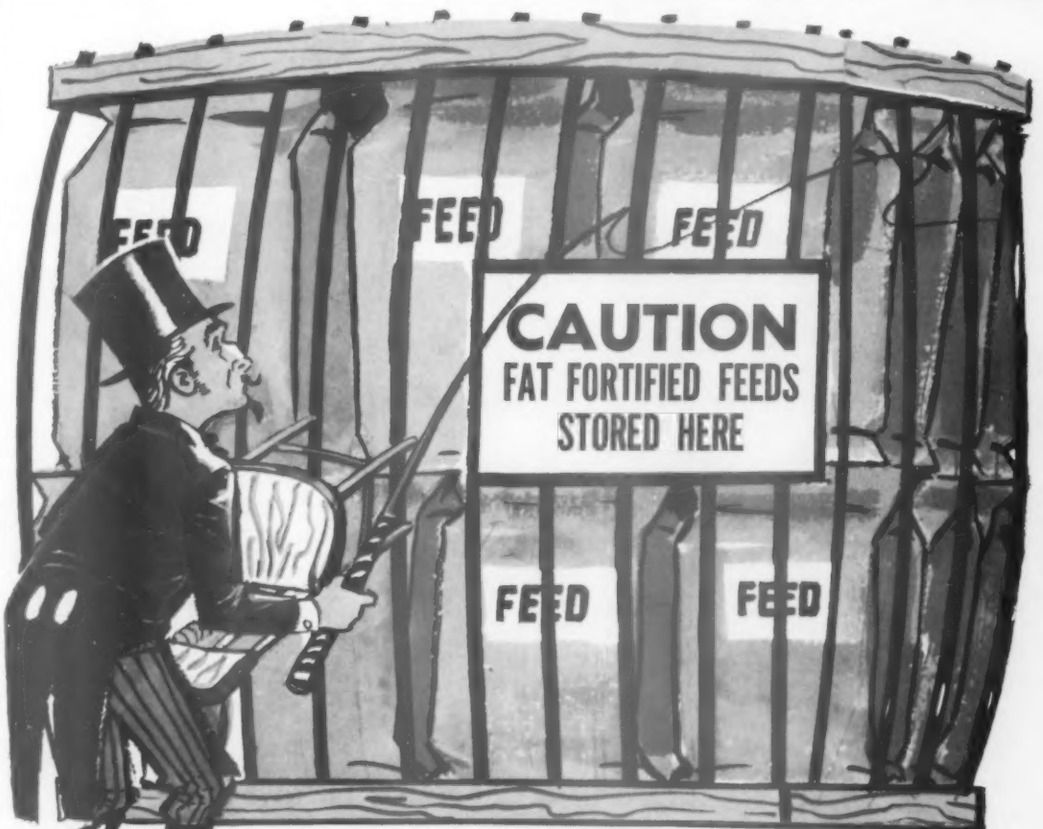

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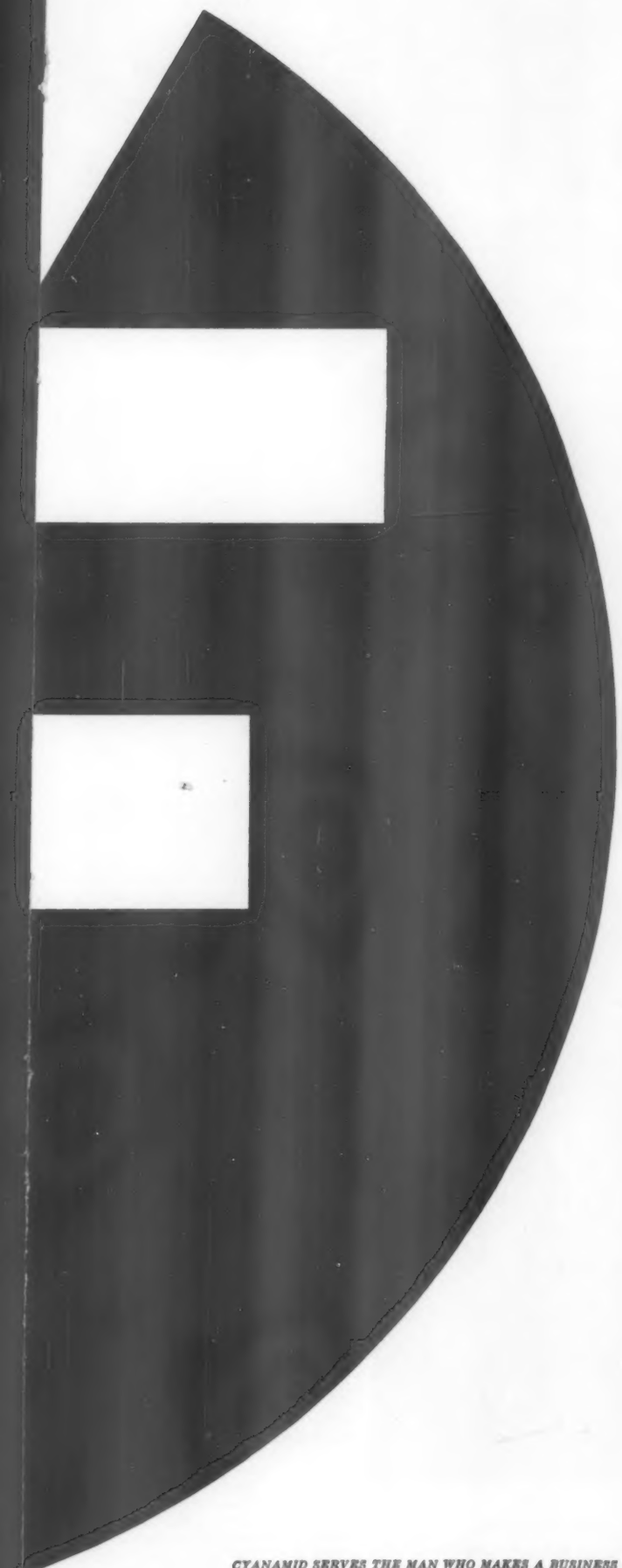

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half of its operation," Dr. C. E. Howes, chairman of the poultry department, Virginia Polytechnic Institute, Blacksburg, Va., told the group assembled. "The losses being incurred can not long be tolerated."

He said in his talk entitled "Condemnations — Your Problem and Ours," that 70 million pounds of poultry were lost to the industry through processing condemnations in 1959 and predicted that the figure for this year will be greater. He added that the loss is increased by processor losses with every empty shackle since labor and overhead amount to about 5¢ for each shackle.

Dr. Howes stated that it is difficult to place an actual "dollar loss" figure on the condemnations since removal of some birds from the market reduces the supply and should reflect a somewhat better price for the remaining birds.

He commented, "The problem seems to be: What can be done about eliminating this dangerous burden?"

He said that the compulsory inspection is "fundamentally sound. With the knowledge that federal inspection is undoubtedly with us permanently, we must place our emphasis upon a reduction of condemnation loss through the rearing of disease-free birds and the development of better handling and processing methods."

"Charge-Back" System

Dr. Howes pointed out condemnation causes which are considered to be farm caused and those which developed subsequent to the bird leaving the grower's farm. He cited Virginia's "charge-back" system where by mutual agreement and understanding between processors and sellers, all condemnations resulting from farm causes are charged against the seller and those resulting from plant causes are construed to be the responsibility of the processor.

He said that without such a system, "all growers would of necessity share condemnation losses through lower prices paid and the efficient producer would be, in effect, penalized for the inefficiency of the careless producer. With resulting follow-through and investigation of unusually large condemnations, attention has been focused upon the weak links of the production and processing chain."

Dr. Howe commented: "Results of our investigations show quite definitely that a large part of the condemnations are found in proportionately few flocks. Once again the importance of careful management of the broiler flock is emphasized, and the contractor's only solution appears to be in the elimination of those flock owners whose activities continually result in high 'farm-caused' condemnations."

Dr. Howes said that "80% of condemnations are classified under the categories of septicemia — toxemia and inflammatory processes. These conditions we know arise at the farm during the growing period and respiratory infections are the greatest contributors to these categories. Thus control of these and other farm diseases must receive serious and immediate attention." He stated that Virginia is seeking a security management program based on the premise that "disease cannot develop if the disease carrying organism is not present."

"It is time we returned to sound principles of cleanliness and sanitation rather than relying upon drugs and antibiotics to bolster our sloppy management practices. Control of disease by medication is too expensive, and while such control by medication will cut mortality it will not necessarily eliminate lesions or signs of the disease which remain to cause the condemnation of the processed bird as unwholesome. Birds free from disease will not be condemned.

"It is obvious then, that our condemnation rates are appreciably higher during the winter season due in large part to increased incidence of respiratory disease. The broiler is a fragile animal, normally placed under many severe stresses in our constant drive to increase growth rate and lower the feed conversion figure. With the additional stresses imposed by cold weather and abrupt extreme variations of temperature and the commonly poor winter ventilation, it is no wonder that condemnations increase.

"This serves to emphasize the point that much of our broiler housing is inadequate and that heating and ventilation facilities are unequal to the needs of winter production. We feel that it will be necessary, as we go forward into a more stabilized broiler production era, to improve housing through insulation, better heating facilities, and more adequate control of air movement to remove moisture and ammonia by the use of mechanical fans."

A talk entitled "The Role of the Poultry Serviceman" was given by Harold Lanier, supervisor of field service, Paradise Valley Poultry Co., Athens, Ga. He stated that in addition to the usual duties performed by the serviceman, he must be a good salesman.

He stated, "The serviceman must first of all sell himself to the grower. To be able to approach any and all growers in such a manner that will be pleasing to the grower in the beginning and throughout his stay with the serviceman is very important.

"Secondly, a serviceman must be abie to sell his company. He must make the grower feel a part of the company—without him the company fails and without the company he fails.

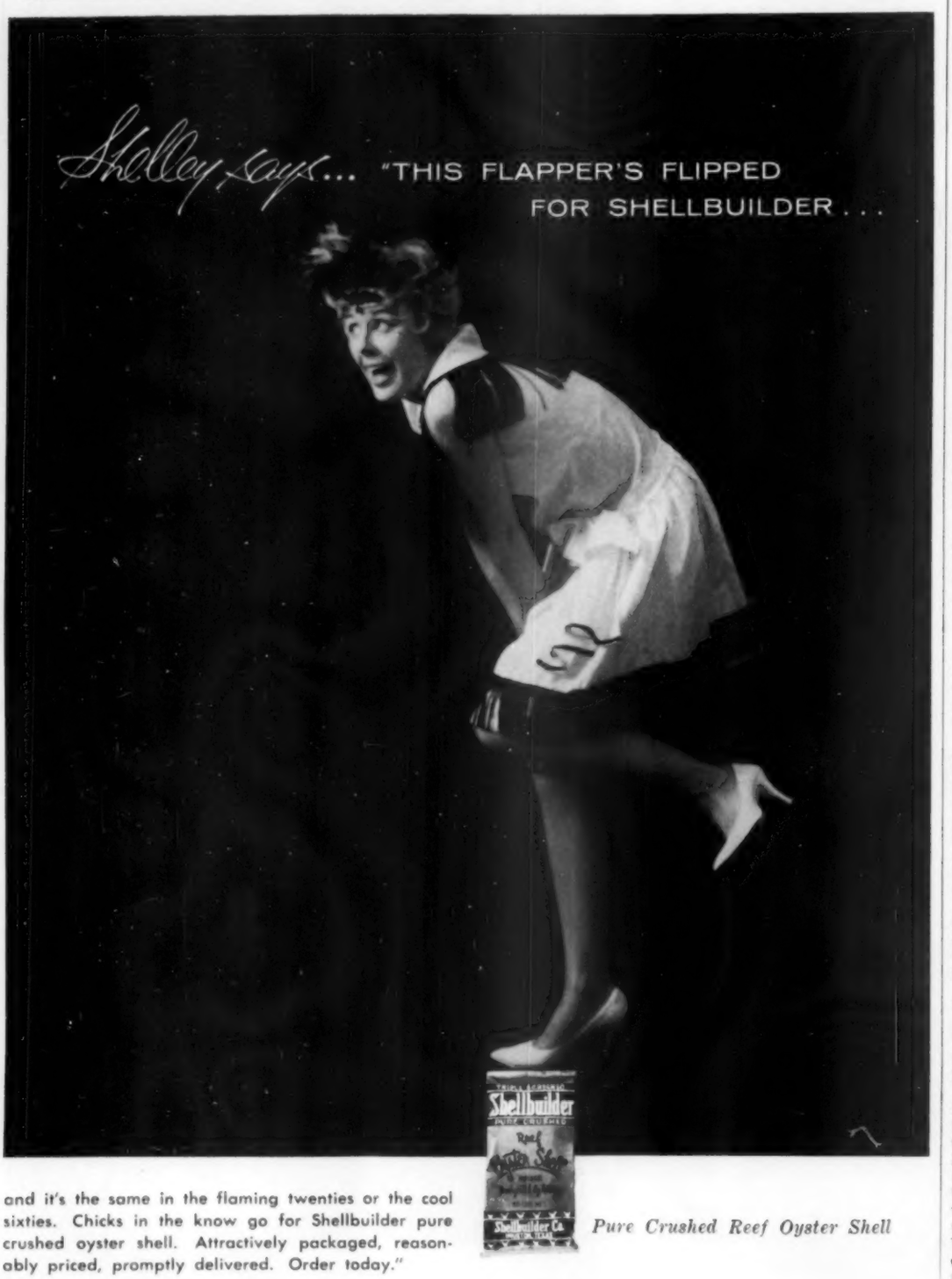
"The serviceman must be able to sell the grower on the best management practices. Here we find a very tough job on our hands due to the many companies in the field and the past history of growers doing too much the way they want to and the companies going along with them on bad practices during times when the chicks are hard to place.

"I feel it takes a real salesman at times to sell contracts to a grower. Here, he must fall back upon the three previously mentioned phases of selling.

"The serviceman must sell his service."

Other qualities he said would be valuable in a serviceman are being a good businessman and a "pretty good poultry pathologist."

Dr. Jack T. Tumlin, McMillen Feed Mills, spoke on "Preventive Medicine in the Poultry Industry." He commented, "Throughout the years that I have been associated with the poultry industry there has been very little thought given to the idea of preventing diseases rather than treating them after they have become serious. We so often find ourselves in the dilemma of trying to control a serious outbreak of disease in a flock of birds after it has established a firm beachhead and is killing large numbers daily."



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Fifth International Congress on Nutrition

A Review of Selected Papers

By Dr. G. F. Combs
University of Maryland

The fifth International Congress on Nutrition, the first to be held in the U.S., was attended by approximately 2,000 people from some 67 countries. The meeting, conducted Sept. 1-7 in Washington, D.C., was under the direct auspices of The American Institute of Nutrition with Dr. C. G. King, president of the congress, and Dr. Paul György, chairman of the organizing committee.

G. F. Combs

The meeting consisted of 37 different scientific sessions which included a total of 367 original scientific reports in various fields of nutrition, seven different three-hour panels and two symposia. The congress was opened Sept. 1 by a welcome from President Eisenhower and others. A response was given by Dr. D. P. Cuthbertson, chairman of the International Union of Nutritional Sciences and in charge of the Rowatt Institute, Aberdeen, Scotland.

The papers presented at each of the panels and symposia will be published in the proceedings of the congress as a supplement to the December, 1960, issue of Federation Proceedings. Abstracts of each paper presented at the various scientific sessions were also available to those in attendance. These were compiled by the secretariat for the congress. Dr. Milton O. Lee, 9650 Wisconsin Avenue, Washington 14, D.C., served as general secretary for the congress.

Any attempt to report on the papers or activities at the congress must be necessarily quite sketchy and incomplete. Nevertheless, in view of the outstanding role which was played by this congress as a symbol for free transfer of scientific information on nutrition throughout the world, an attempt to report some of the highlights of this meeting as they affect animal nutrition and food production seems appropriate, even though it will be grossly inadequate.

Panel Discussion

Of course, the emphasis during most of the program dealt with the nutrition of humans primarily. But in considering this problem one immediately finds that the improvement of human nutrition must stem from improvements in agriculture and animal food production throughout the world. One of the panels dealt with this problem, the title being "Animal Nutrition and Food Production." Perhaps some of the important topics brought out by this panel would be most appropriate.

Prof. Bigwood, department of biochemistry and nutrition, faculty of medicine, Brussels University, Belgium, spoke on the general problems of animal nutrition in underdeveloped areas. He pointed out that there are two major factors which must be considered: (1) Malnutrition, due to protein deficiency (chiefly animal protein shortage) and (2) growing requirements, because of population expansion as well as increased life expectancy throughout the world.

Though there are short-term programs of assistance the only permanent way to solve the increasing problem of feeding the world population in underdeveloped areas is to initiate sound agricultural programs which include the increased production of animal products to provide more of the protective nutrients and protein so greatly needed in certain areas.

Dr. Bigwood indicated that in countries of the western world, people consume approximately 100 gm. of total protein per day, 30-40% of which is from animal sources. He further stated that consumption of animal protein in many parts of the Mediterranean basin and also of the Latin American continent ranges somewhere between 15 and 30 gm. per person per day. In central Africa and in most parts of Asia the level may drop to as little as 15 gm. per person per day. In the Congo basin and surrounding areas where some 12 million people are very widely scattered, he indicated that the animal protein intake may drop as low as 1 gm. per person per day. This illustrates the scope of the food problems confronting the world today and the prominent role of animal nutrition and food production in their solution.

Dr. Bigwood also emphasized the well-known fact that improvement of balance of the overall diet of a population by covering a larger proportion of its caloric requirements with foods of animal origin is economically expensive. Nevertheless, proper balance can best be maintained with an adequate proportion of foods of animal origin and foods of vegetable origin.

Even though humans can obtain nutrients more efficiently from many plant foods by direct consumption, animals serve as excellent converters of foods which cannot be normally consumed by humans and also serve to synthesize certain nutrients and concentrate them in a form which may serve to supplement the plant foods available for man.

Dr. Bigwood stressed the need for cooperative effort in considering the problems of feeding the developing countries of the world and the need for adequate international economic technical planning on a worldwide basis. Surplus production, in those more fortunate areas of the world, must be distributed through some international organization to the underprivileged areas with maximum possible speed in order to meet the existing emergency.

Efficiency of Feed Conversion

Another interesting paper given as a part of the animal nutrition and food production panel was that of Dr. K. L. Blaxter of the Hannah Dairy Research Institute in Scotland.

In discussing the efficiency of feed conversion by different classes of livestock in relation to food production, Dr. Blaxter pointed out that the comparative efficiency of converting feedstuffs to foodstuffs depended largely upon the type of feedstuffs involved since the ruminant is much more able to convert roughages than is the hen or pig and, at the same time, the hen is more able to convert high energy feed ingredients than are ruminants.

Dr. Blaxter summarized his paper by stating, "The planning of agriculture of an area to support the human population obviously must take into account the efficiency of livestock as convertors of feed to human food, but we should not be overly concerned about the comparative merits of different classes of stock nor with the comparative merit of plants or animals but rather the complementary merits of an integrated agricultural economy. Livestock provide a means for the utilization of land resources that cannot be directly used to produce human food, they can act as scavengers of waste products of the food industry, they can convert surpluses into more acceptable products, and they can concentrate or, in the instance of ruminants, synthesize vitamins and protein from low grade sources to provide supplements for food grains."

Dr. K. Breirem, Institute of Ani-

(Turn to page 42)

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ITALIAN FEED MEETING—Dr. R. A. Rasmussen, left, vice president and director of research, animal division; Wiley Akins, vice president and general manager, and Gene Di Riomondo, European representative, Peter Hand Foundation, are shown at a joint meeting in Rome of the Italian Association of Mixed Feed Producers (Assalzoo) and the Soybean Council of America. "Recent Developments in Swine Nutrition," "Quality Control of Pre-Mixes and Feeds" and "Quality Control in Soybean Meal" were the subjects of papers written by Dr. Rasmussen and presented at the joint meeting. Following the Rome sessions, the executives of the Chicago manufacturer of vitamin fortifiers for the feed industry visited Milan, Trieste, Zagreb, Vienna and Zurich for further discussions with European feed manufacturers.

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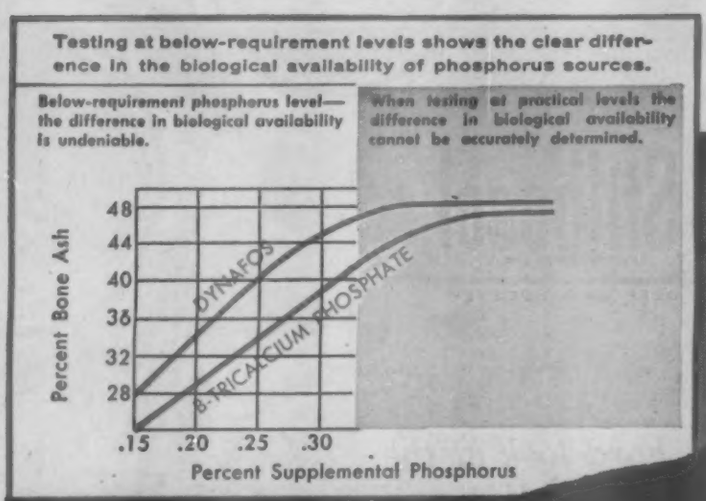

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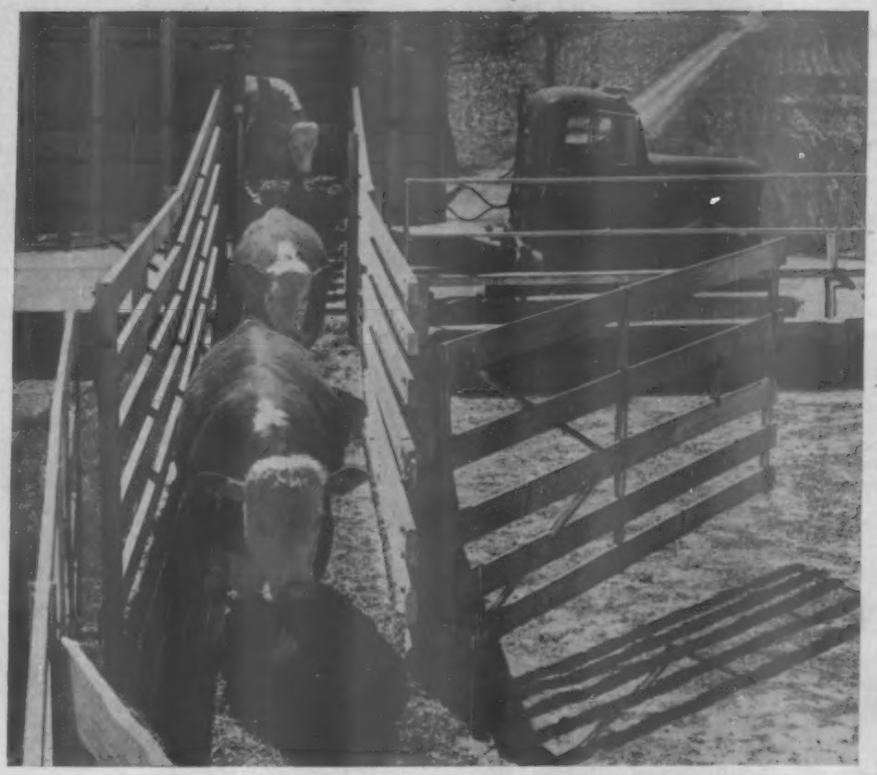

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During the last six years, it is estimated that Stilbosol accounted for an extra 722,880,000 pounds of beef to feed our meat-hungry and growing nation. This is enough to meet the beef demands of over nine million Americans for one year (based on USDA beef consumption figures of 80 lbs. per capita). Without this increase, some experts suggest that beef could have priced itself out of the picture in fighting for Mrs. Consumer's meat-buying dollar.

TODAY—AND TOMORROW

The widespread use and proved success of Stilbosol in supplements for fattening cattle has led to many other attempts to develop similar additives that would help feeders produce more beef at less cost. Many *were* developed and marketed. Yet the fact remains—*Stilbosol continues to offer more to the feeder than any other feed additive on the market.* By 1970 (ten short years from now), cattle feeders will have to supply beef to an estimated thirty to forty million more Americans. This means cattlemen will have to increase production by 22%! Stilbosol will help you meet this challenge.

Stilbosol is Elanco Products Company's trademark for diethylstilbestrol premix which is manufactured and sold under exclusive license granted by Iowa State College Research Foundation, Inc., under its U. S. Patent No. 2751303.

After six years, Stilbosol (most thoroughly tested feed additive in the world) continues to give feeders an extra 15% gain on 10% less feed.

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mal Nutrition, Royal Agricultural College of Norway, spoke on "The Relation of Nutrition of the Young Animal to Subsequent Fertility and Lactation."

His summary was: "The effects of different planes of nutrition in cattle during growth have been studied extensively in this century. By using feed rations, balanced as to essential nutrients, the energy intake has been varied to a considerable extent. Young, growing cattle have been kept at, or even below, maintenance level for several months, or at energy levels 20-40% lower than those prescribed in current standards for normal feeding, during the first 2-3 years of life.

"Alternating low and high planes have also been used. Restrictions in the energy intake have a retarding effect on the growth. By prolongating their growth period and growing more rapidly in the periods of liberal feeding following those of undernutrition, the animals are capable of recovering and may eventually attain the size of well-fed animals. A long-lasting, severe undernutrition at an early age, however, may lead to permanent stunting.

"Since the width measurements seem to be more seriously affected than the height measurements, severe undernutrition may influence body conformation more than it does size. Breed differences as to the effects of undernutrition have been demonstrated. The Jersey has great resistance, while in the Shorthorn permanent stunting may occur, even at moderate restrictions in feed intakes.

"In dairy heifers, energy intakes 20-30% below the current feeding standards during the first 2-2½ years of early life, have no detrimental effects on the lactation ability. During the first lactation period, the milk yield may be somewhat lower than in well-fed animals, but during the subsequent lactation periods the animals reared on low planes of nutrition give yields at least as high as those of animals reared on the energy levels prescribed in the standards. It is then presupposed that after the first calving, the energy levels are equalized according to feeding standards.

"An increase in the feeding level, some weeks before the first calving, counteracts the lowering effect on the yield in the first lactation period, caused by low energy levels used earlier in life. Energy intakes exceeding those prescribed in the standards, for the rearing period up to first calving, seem to depress the lactation performance. This effect is more likely to occur in the Jersey than in other breeds.

"It has been shown that the plane of nutrition influences the sexual development in cattle. Heavy-fed heifers attain the first estrus at an early age, while the estrus is retarded in animals reared on low planes of nutrition. The possibility of early breeding in heavy-fed animals cannot be regarded as an advantage, as the fertility and longevity seem to be impaired by heavy feeding early in life. The experimental evidence available invites to some reduction in the energy levels prescribed in the current feeding standards for growing cattle in order to arrive at a more economic feeding. However, progressive stockmen, interested in the appearance of their animals are not inclined to use low feeding levels.

"Studies in other species confirm the results attained with cattle. When heavy feeding in cattle seems to be more questionable during early life than at a mature age, it must be taken into account that lactating cows have a great need for energy. In relation to their requirements, therefore, heavy-fed cows may receive less energy than heavy-fed young cattle."

Nutritional Deficiencies

Dr. E. J. Underwood, prominent authority on trace minerals from the Institute of Agriculture, University of Western Australia, Nedlands, Western Australia, covered the topic, "Recognition and Correction of Deficiency States."

His general conclusions were: "Nutritional disabilities affecting the productivity of grazing stock are known to occur over large areas of the earth's surface. As diagnostic techniques improve and other factors limiting animal production are overcome, it can be predicted that many more such areas will be discovered, especially those in which the qualitative abnormalities in the herbage are so slight that acute disease conditions with well-marked symptoms rarely arise.

"It is becoming increasingly apparent that naturally occurring deficiencies or excesses in animals seldom exist in simple or uncomplicated form, or as a direct and simple consequence of a deficiency or excess of a particular element in the soil. They invariably occur as a result of a complex interaction between the soil, the plant, the climatic environment and the animal itself. Sometimes one and sometimes another of these four factors is the dominant causal component of the complex.

"For these reasons, both the detec-

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THE IMPORTANCE OF VITAMIN D NUTRITION

In this educational series to farmers and feeders, Dr. G. C. Wallis answers important questions about Vitamin D Nutrition.

Dr. Wallis Answers

YOUR QUESTIONS ON VITAMIN D NUTRITION

Q: How can I be sure each pound of my feed has the same amount of vitamin D as the next pound will have?

A: Uniform distribution depends mainly upon the physical properties of the vitamin D concentrate, proper mixing methods and efficient equipment. By careful management, mixing, adequate for all practical purposes, can be readily achieved. The extremely small particle size and free-flowing characteristics of Fleischmann's FIDY Irradiated Dry Yeast help tremendously in getting good distribution.

Q: At what age of animal is vitamin D most important?

A: Lack of adequate vitamin D can be disastrous at most any age. Formerly, vitamin D deficiency was thought to occur only in young growing animals. Research has now shown that mature dairy cows need vitamin D. Difficulties from inadequate vitamin D have also been observed in older beef cattle, sheep and swine.

Q: Is there a relationship between the daily feeding of a higher level of vitamin D, 8,000 units per pound of feed or more, and the possible control of milk fever without having to feed the massive doses recommended for the short period before freshening?

A: Recent careful research provides reasons why benefits from year around feeding of higher levels of vitamin D might be expected. Older cows have previously unrecognized difficulties in absorbing and utilizing calcium. Extra vitamin D helps. The results of clinical and practical studies on the control of milk fever by fortifying regular dairy rations at higher levels are very encouraging.

Q: Does artificial drying lessen the vitamin D content of hay?

A: Figured on a dry matter basis, the vitamin D content of artificially dried hay is probably about the same as was in the green forage before drying. During field curing vitamin D tends to increase but the amount is not as great as commonly supposed. Reports on 13 samples showed an average increase of only 115 units per pound during field curing. Such an increase in vitamin D in a whole ton of hay would be worth only about ¼ cent.

Q: What is the difference between brewers dried yeast and irradiated dry yeast?

A: Brewers dried yeast is a by-product from the brewing of beer and ale which is used in feeds mainly as a source of the B-complex vitamins and protein. FIDY Irradiated Dry Yeast is a primary grown yeast which has been subjected to ultraviolet irradiation under carefully controlled conditions to produce vitamin D_2. It is used in four-footed animal feeds solely as a source of vitamin D.

D. C. Wallis

For more complete answers to any of these questions write to Dr. G. C. Wallis, Director of Nutrition, Agricultural Department, Standard Brands Incorporated, 625 Madison Avenue, New York 22, N. Y.

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Today's feeds have added nutritional fortification to assure proper levels of important nutrients required for good production.

Fleischmann's FIDY Irradiated Dry Yeast is a rich and economical source of vitamin D_2—easy to use, dependable in potency, outstanding in dispersion qualities.

Formulate your feeds with FIDY Irradiated Dry Yeast—for reliable Vitamin D fortification.

NEW IDEAS VITAMIN D FEEDING

Research provides new ideas on:

- The older cow and sustained high production.
- The prevention of milk fever.
- The improvement in absorption and utilization of calcium and phosphorous.
- The variability of vitamin D from natural resources.
- The availability of calcium reserves in older cattle.

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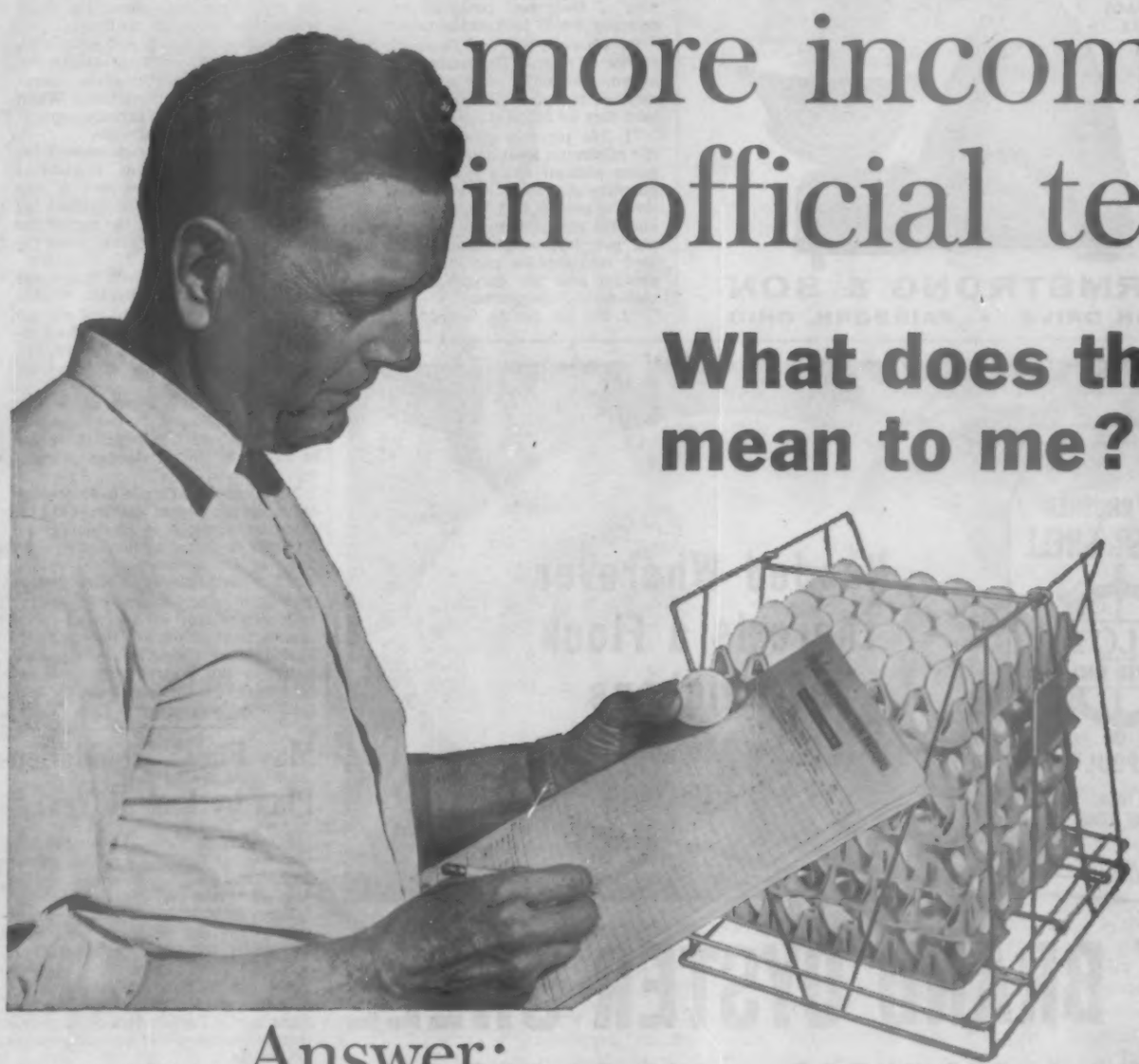
"It's good business to do business with Amburgo"

The man who depends on egg profits for a better living has the right to know...

"Hy-Line Layers earn more income in official tests

What does that mean to me?"



Answer:

How layers perform in official tests is actually your second-best way to compare various brands. The best way would be to try them all yourself. But you can't possibly do that. So test results . . . if you check enough of them . . . are a helpful guide for you to use. For example, 22 official tests ending in 1958 and 1959 show that Hy-Line layers outperformed the 9 next largest-selling birds by 55¢ more income over feed and chick cost . . . or $550 extra per thousand birds. Profitable performance in tests and on farms is why one out of every eight egg-type chicks hatched in the U. S. this year is a Hy-Line chick... the world's most popular, by far. Be sure you help your feed customers choose the kind of layer which will improve their chance of making bigger profits—recommend they make their next brood Hy-Line chicks.

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Hy-Line Precision Genetics uses inbreeding, hybridizing, and poultry blood-typing to develop Hy-Line layers that are outstanding for production, livability, feed efficiency and large, good-quality eggs.

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Increase your soybean profits this year

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tion and definition of nutritional disabilities in grazing stock and the procedures to be used in their prevention or control require that the whole environment of the animal be taken into account. The application of existing techniques for the detection and the control of deficiency and toxicity states in grazing animals, in which the significance of the whole soil-plant-climate-animal interrelationship is recognized, offers enormous scope for increasing food production, through better animal health and productivity. Despite the spectacular advances of recent years, it seems likely that we are only at the beginning of their real potential for increasing world food production."

Dr. Clausen, National Research Institute of Animal Husbandry, Copenhagen, Denmark, very simply summarized the principles for producing lean pigs as follows:

"1. No pig can produce meat to the maximum level determined by its genes without being fed a sufficient quantity of protein. By increasing the level of protein to 1.5 kilos skim milk and 110 gm. protein concentrate per pig per day, weight gain increases, feed consumption per kilo gain decreases and the carcass quality is considerably improved.

"2. No pig can be forced, through exceptionally high levels of protein in the feed, to produce more meat than that limited by its genes.

"High levels of protein supplementation, above 1.5 kilos skim milk and 110 gm. protein concentrate per pig per day, has neither at limited, nor at semi ad lib. feeding, increased the daily gain, decreased the feed consumption per kilo gain or improved the carcass quality.

"From principles 1 and 2 follows whether or not an influence on carcass quality is to be obtained from feeding increasing quantities of protein will depend partly on the level of protein fed to the pigs and partly on the pigs' limitative genes for meat production (meat or lard type).

"Selection of boars and sows with the best possible genetic ability for producing meat carcasses is, therefore, of the utmost importance. When progress is made, the protein requirements of the breed increase.

"3. When the daily requirement for maintenance and meat production has been covered, the rest of the daily feed intake will be utilized for fat production, that is, the higher the daily intake of energy, the fatter the pig."

Dr. Clausen concluded: "Until the genotype of meat production of pigs in general has been improved enough to allow ad lib. feeding the feed intake of the pigs must be limited, i.e., when production aims at lean animals."

The author also appeared on this panel and discussed the developments in poultry nutrition which have led to more efficient production of poultry meat and eggs.

No attempt was made to review the 367 scientific papers, but they did include two sections on ruminants, one on lipids in animals, one dealing with proteins and amino acids in animal studies, another dealing with protein quality in animals and one dealing with cholesterol in animals. Of course, most of the other sections included studies dealing with animal nutrition and abstracts of these papers might be obtained from the secretariat of this congress.

May Finish Liquidation Plan by End of Year

ROANOKE, VA. — Lindsey-Robinson, Inc., of Roanoke may finish the liquidation program it announced on Aug. 27 by the end of this year.

Emmett M. Williams, Jr., president and general manager, said that practically all of the company's flour and feed mills' inventory had been liquidated. Employment has been reduced to 12-15 workers and Mr. Williams said a further reduction to less than 10 workers will be made within 2-3 weeks.

At the time of the liquidation announcement the firm employed around 60 persons.

Lindsey-Robinson still has poultry contracts in Viriginia but they, also, are being liquidated. All company personnel in North Carolina have been released.

PILOT BRAND OYSTER SHELL

IN DEMAND EVERYWHERE . . . ALL OF THE TIME

PILOT BRAND knows no season. It's a best seller the year 'round. Poultry raisers have learned that this ideal eggshell material helps them get more eggs . . . eggs with stronger shells . . . eggs that bring top prices in the market.

Constant demand for PILOT BRAND means steady sales and profits for you. And we help to bring more and more business your way with powerful national advertising.

PILOT BRAND Oyster Shell is uniformly pure calcium carbonate . . . kiln-dried . . . costs less per usable pound. Stock it—display it—promote it!

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Mobile, Alabama

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(85% Feeding Cane Molasses Equivalent)

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CK Processing Company

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MUSCATINE, IOWA

Now from Merck...

DYNAFAC

Helps cattle gain as much as 15% faster for as little as 1/2¢ per head per day

If your cattle feeder customers are interested in producing beef for profit, they have to be interested in DYNAFAC. And so do you! Especially in view of today's modern feeding programs with faster finish at lower roughage levels.

WHAT IT IS. DYNAFAC is neither an antibiotic nor a hormone additive. It is the feed additive so different it required an entirely new classification known as "chemobiotics". The active ingredient of DYNAFAC is tetra alkyl-ammonium—a chemical compound derived from animal fat that is stable under extreme conditions of heat, cold and humidity.

HOW IT WORKS. DYNAFAC is not absorbed into the bloodstream nor stored in the tissues. It stays in the digestive tract to control undesirable bacteria without impairing the beneficial organisms that aid digestion. Furthermore, because DYNAFAC is non-toxic—the danger of overdosage is minimized.

WHAT IT DOES. DYNAFAC gets cattle (as well as sheep) on full feed faster and safer... produces equal responses on corn, barley and milo rations. It aids in increasing growth and feed conversion ability... provides earlier bloom. It helps reduce feedlot bloat and founder—as well as overeating disease. And DYNAFAC does it all so economically, growers *often report returns of as much as a dollar for every dime spent.*

HOW YOUR CUSTOMERS PROFIT. Feeders throughout the country report that DYNAFAC feeding provides remarkably faster finishes... produces top quality rib eye and well-marbled meat with no thick undesirable outside bark fat. There are fewer "tail enders", more uniform carcasses. DYNAFAC can do the same for *your* customers. See your Merck Feed Products Representative the next time he calls or write today to Agricultural Products Department, Merck Chemical Division, Merck & Co., Inc., Rahway, N. J

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Convention Calendar

Oct. 11-13—Virginia State Poultry Federation; Hotel Roanoke, Roanoke, Va.; sec., Paul Williams, 615 East Franklin Street, Richmond 19.

Oct. 12 — Animal Nutrition Research Council; Shoreham Hotel, Washington, D.C.; sec., Dr. Philip Derse, Wisconsin Alumni Research Foundation, 506 N. Walnut St., Madison 5, Wis.

Oct. 12-13 — Association of American Feed Control Officials Annual Meeting; Shoreham Hotel, Washington, D.C.; sec., Bruce Poundstone, Feed and Fertilizer Dept., Agricultural Experiment Station Bldg., University of Kentucky, Lexington.

Oct. 13-14 — Turkey Short Course and Jr. Market Turkey Show; University of Missouri, Columbia; E. M. Funk, sec., Missouri Poultry Improvement Assn., Poultry Bldg., Box 568, Columbia.

Oct. 16-18—Kentucky Poultry Federation and Kentucky Poultry Improvement Assn.; Kentucky Hotel, Louisville; John W. Tuttle, field manager.

Oct. 16-20 — Business Management Program; sponsored by the Southeastern Poultry & Egg Assn., University of Georgia, Athens; sec., Harold E. Ford, 235 East Ponce de Leon Ave., Decatur.

Oct. 17-18—California Animal Industry Conference; Fresno Memorial Auditorium, Fresno, Cal.; co-sponsored by California Hay, Grain & Feed Dealers Assn. and University of California; chm., Bert Maxwell, Nulaid Farmers Assn., Petaluma; association office, 1400 Tenth St., Sacramento 14.

Oct. 19-21—International Symposium on Animal Nutrition; Madrid, Spain; Geo. M. Strayer, Exec. Vice Pres., American Soybean Assn., Hudson, Iowa.

Oct. 20-21 — Alabama Nutrition Conference; Auburn University, Auburn, Ala.; sec., Alabama Feed Assn., George R. Ingram, P.O. Drawer 500, Cullman, Ala.

Oct. 20-21 — West Virginia Feed Dealers Assn.; Blackwater State Park, Thomas, W. Va.; J. Z. Ellison, 801 Willowdale Rd., Morgantown.

Oct. 20-21 — Cooperative G.L.F. Exchange, Inc.; stockholders annual meeting; Onondaga War Memorial Bldg., Syracuse, N.Y.

Oct. 20-21—Poultrymen's Institute; Washington State University, Pullman; W. R. Jenkins, Extension Poultry Specialist, Agricultural Extension Service.

Oct. 23-25 — Southeastern Feed Production School; University of Georgia, Athens; Harold E. Ford, Southeastern Poultry & Egg Assn., 235 East Ponce de Leon Ave., Decatur, Ga.

Oct. 25-26—Nebraska Poultry Improvement Assn.; National Guard Armory, Lincoln, Neb.; sec., Doyle H. Free, Poultry Husbandry Bldg., University of Nebraska, Lincoln.

Oct. 25-26 — Indiana State Poultry Assn.; Purdue Memorial Center, Purdue University, Lafayette: sec., Robert L. Hogue, Poultry Science Bldg., Purdue.

Oct. 27-28—National Swine Industry Conference; University of Kentucky, Lexington.

Oct. 27-28 — Washington Poultry and Hatchery Assn.; Chinook Hotel, Yakima.

Oct. 27-29—National Swine Industry Conference; University of Kentucky, Lexington, Ky.; chm., Keith Myers, Secretary, National Swine Growers Council, Box 241, Grundy Center, Iowa.

Oct. 28—Illinois Sheep Day; University of Illinois, Urbana; chm., Dr. U. S. Garrigus, Animal Science Dept.

Nov. 2-3 — Kansas Poultry Assn.; Broadview Hotel, Wichita; sec., Harry J. Reed, Box 663, Manhattan.

Nov. 2-3 — Illinois Feed Assn.-Illinois Poultry & Hatchery Federation, joint convention; Springfield, Armory, Springfield; sec., IFA, Dean M. Clark, 141 W. Jackson Blvd., Chicago 4; sec., IPHF, Aubrey Hariess, Shelbyville, Ill.

Nov. 3—South Dakota Swine Research Day; South Dakota State College, Brookings.

Nov. 3-4 — Cornell Nutrition Conference; Hotel Statler, Buffalo, N.Y.; chm., Dr. H. H. Williams, Biochemistry and Nutrition Dept., Savage Hall, Cornell University, Ithaca, N.Y.

Nov. 9-12 — National Renderers Assn.; Statler-Hilton Hotel, Dallas, Texas; sec., Miss Jamie Fox, 30 N. LaSalle St., Chicago, Ill.

Nov. 14-15 — Washington Animal Industry Conference; Skagit Valley College, Mount Vernon, Wash.; John G. Wilson, mgr., Washington State Feed Assn., 814 Second Ave. Bldg., Seattle 4.

Nov. 16-17—Missouri Poultry Improvement Assn.; Hotel Continental, Kansas City; sec., E. M. Funk, Columbia, Mo.

Nov. 16-18 — Florida Nutrition Conference; University of Florida, Gainesville; chm., Dr. J. P. Feaster, Animal Husbandry and Nutrition Dept.

Nov. 17-18 — Liquid Feed Assn.; Kansas City; Jack von Mettenheim, Princeton, Ill.

Nov. 20-22—Western Grain & Feed Assn. of Iowa; Fort Des Moines Hotel, Des Moines, Iowa; sec., Bob Skinner, 401 Shops Bldg., Des Moines 9.

Nov. 25-26 — American Society of Animal Production; Hotel Sherman, Chicago, Ill.; sec., Clair E. Terrill, Animal Husbandry Research Division, Agricultural Research Center, Beltsville, Md.

Dec. 1-2 — North Carolina Animal Nutrition Conference; North Carolina State College, Raleigh; chm., Dr. J. W. Kelly, Poultry Science Dept.; co-sponsored by North Carolina Feed Manufacturers Assn., sec., McNair Evans, Box 44, Mocksville.

Dec. 2-3—Western Quickie Convention; Disneyland Hotel, Anaheim, Cal.; Don M. Turnbull, sec., American Poultry & Hatchery Federation, 521 E. 63rd St., Kansas City 10, Mo.

Dec. 6-7—Cornell Poultry Servicemen's Clinic; Cornell University, Ithaca, N.Y.

Dec. 6-7 — North Dakota Turkey

CALENDAR FOR 1960-61

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New Listings

For the convenience of readers who scan the Convention Calendar regularly for new listings, those added to the column in the current week appear separately from ones which have been entered previously. The following week they will be moved to their proper slot where they will remain until the event is held.

Nov. 15-16—North Carolina Egg Industry Conference; North Carolina State College, Raleigh; College Extension Division, Box 5125, State College Station, Raleigh.

Nov. 16—Poultry Industry Day; Blake Hall, College of Agriculture, Rutgers University, New Brunswick, N.J.; chm., Dr. R. L. Squibb, Poultry Science Dept.

Nov. 27-28—Tennessee Feed Manufacturers Assn.; Noel Hotel, Nashville; sec., Charles H. Warfield, American Trust Bldg., Nashville.

Dec. 2-3—Arkansas Turkey Federation Convention and Show; Hot Springs, Ark.; exec. director, John Haid, Box 1446, Little Rock.

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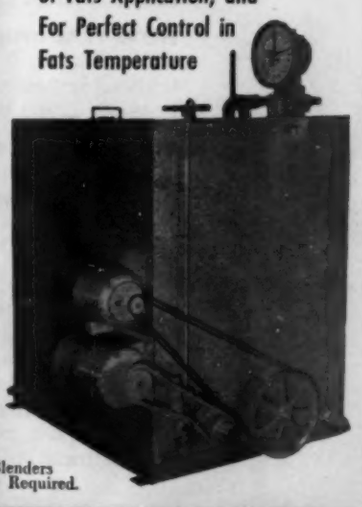

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FEED SUPPLEMENT
DPi
MADE IN ROCHESTER, N. Y., U. S. A. BY
DISTILLATION PRODUCTS INDUSTRIES • DIVISION OF EASTMAN KODAK COMPANY
20,000 INTERNATIONAL UNITS OF VITAMIN E PER POUND

The "d" means the vitamin E in *Myvamix Vitamin E Feed Supplement* is the same stereoisomer that appears in nature. 1 milligram of *d*-alpha-tocopheryl acetate is equivalent to 1.36 International Units of Vitamin E.

The vitamin E in *Myvamix* is on a dry, non-dusting soy grits base. We use grits instead of meal because they have less fiber, less moisture, more protein, more uniform particle size, and are dusted to remove hulls and powder. All this means a higher quality product, one that's as easy to handle as anything in your mill.

With *Myvamix*, you know exactly how much vitamin E is in your feed. There's a sure 20,000 International Units of Vitamin E per pound. The cost is only a few dimes per ton of feed.

The "acetate" means that the vitamin E in *Myvamix* is really stable. Tests show no loss of potency even after storage in finished feeds for six months at 100 F. The full potency you put in the feed is there when the feed is fed.

There are at least seven tocopherols which have some vitamin E activity. The most effective biologically is "alpha." That's what is in *Myvamix Vitamin E Feed Supplement*. (Only 10 to 15% of the tocopherols in corn is "alpha"—the rest is "gamma," one of the least effective of all.)

'EGGHEAD' COWBOY—Jack Kelly, co-star of "Maverick," a western TV program, came to grips with the shell of the situation in an "eggciting" scene from a recent episode of the show. The egg promotion on this show, through Mr. Kelly's consumption of hard-cooked eggs, was arranged by Hess & Clark as a part of its "Golden Goodness of Eggs" campaign.

and Egg Convention; Fargo Civic Center Auditorium, Fargo, N.D.; sec., Irving J. Mork, Fargo.

Dec. 7-8—Midwestern Quickie Convention; Conrad Hilton Hotel, Chicago; Don M. Turnbull, sec., American Poultry & Hatchery Federation, 521 E. 63rd St., Kansas City 10, Mo.

Dec. 8—Arizona Grain and Seed Assn.: Westward Ho Hotel, Phoenix; sec., Willis F. Nielson, Box 787, Mesa, Ariz.

Dec. 8-9—Eastern Quickie Convention; Ben Franklin Hotel, Philadelphia; Don M. Turnbull, sec., American Poultry & Hatchery Federation, 521 E. 63rd St., Kansas City 10, Mo.

Dec. 12-13 — Midwest Veterinary Nutrition Conference; Continental Hotel, Kansas City; Lloyd Larson, Midwest Feed Manufacturers Assn., 20 W. 9th St. Bldg., Kansas City 5, Mo.

Dec. 13-15 — Minnesota Poultry Hatchery Assn.; Hotel Radisson, Minneapolis, Minn.; sec., L. L. Baumgartner, Litchfield, Minn.

Molasses Trade Growth Continued During July

NEW ORLEANS — The trend toward greater U.S. trade in industrial and feed molasses continued during July.

A report issued from New Orleans by the U.S. Department of Agriculture says molasses imports for the month totaled 50 million gallons, an increase of 9.7 million from June and 21.2 million higher than imports in July of last year. Cumulative imports of molasses Jan. 1 through July 31 amounted to 294.4 million gallons —about 15 million gallons more than were imported during all of 1959, and 108.7 million more than were imported during the first seven months last year.

Principal sources of imports in July, in millions of gallons, were: Cuba, 24.5; Mexico, 13.5; Jamaica, 6.5; French West Indies, 2, and Barbados, 1.5.

Exports of industrial and feed molasses from the U.S. and its territories in July totaled 5.9 million gallons. June's export total was 2.7 million. This increase brought Jan. 1 through July 31 exports to 14.1 million gallons as against 10.5 million exported during the same period a year earlier.

Of the 1960 exports, 12.3 million gallons came from Puerto Rico and the remainder came from the U.S. mainland.

National Alfalfa Names District Assistant

KANSAS CITY—James L. Rehyer has been appointed assistant sales manager of National Alfalfa's Manzanola, Colo., district, according to an announcement from A. R. McFadden, vice president, sales.

J. L. Rehyer

In this capacity, Mr. Rehyer will be responsible for ranch business, as well as assist in sales at the firm's headquarters in Manzanola.

National maintains a major dehydrating installation at Manzanola and year round supplies of dehydrated alfalfa and sun-cured alfalfa products are kept there.

9 Wyoming Counties Now Emergency Areas

WASHINGTON — Ezra Taft Benson, secretary of agriculture, has designated nine counties in Wyoming as emergency areas where farmers and ranchers may buy government-owned feed grains at current support prices.

The counties designated are: Big Horn, Converse, Fremont, Hot Springs, Lincoln, Natrona, Niobrara, Washakie and Weston.

Previously 34 counties in Mississippi and 18 parishes in Louisiana had been designated as emergency areas under this program. In all, 61 counties or parishes are currently designated under the livestock feed program.

Legislation authorizes the secretary of agriculture to sell feed grains owned by the Commodity Credit Corp. at current support prices to provide feed for livestock where he determines there is an emergency area as defined by law.

It was reported that the designated Wyoming counties have had a severe drouth reducing feed grain and hay supplies and limiting range forage.

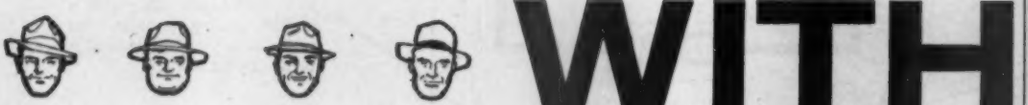
Boards OK Coca-Cola, Minute Maid Merger

ATLANTA—The boards of directors of the Coca-Cola Co. and Minute Maid Corp. have approved in principle the proposal under which Coca-Cola would acquire Minute Maid through an exchange of stock.

After formal approval of a merger agreement by both boards, the proposal will be submitted for approval by stockholders of both companies at special meetings which will probably be held in December. The announcement was made jointly by W. E. Robinson, Coca-Cola board chairman, and J. F. Brownlee, chairman of the board of Minute Maid.

Mr. Robinson and Mr. Brownlee said that Minute Maid would continue operating with its present management.

EVERYONE GAINS $ $ $ $ WITH KRACO



Boost all your feeds with Kraco, the fresh-dried, naturally sweet whey by Kraft—and see how **YOU GAIN:** This natural source of important milk by-product nutrients makes a good feed better at low cost . . . makes it sell faster, get repeat sales and earn you more profit.

YOUR CUSTOMERS GAIN—Whatever kinds of livestock or poultry they feed, they'll make more profit with Kraco in the formulas you sell them because . . . **THEIR ANIMALS GAIN** . . . Kraco's milk by-product nutrition helps them produce more at lower cost and keep healthy. Kraco is guaranteed to contain a minimum of 68% lactose. It also contains high-quality protein . . . plus the important whey factor, milk minerals and B complex vitamins.

KRAFT 'KOPTER: Kraft's unique new advertising to farmers is based on up-to-the-minute feeding testimonials obtained by Kraft Flying Farm Reporters . . . merchandised by 'Kopter appearances at fairs, conventions and farm shows.

KRACO fresh dried sweet whey by **KRAFT**

For full details, ask your Kraft Man or write: KRAFT FOODS AGRICULTURAL DIVISION—CHICAGO 90, ILLINOIS

FOR Feeding OILS INGREDIENTS
Packing House By-Products
W. D. Haugen Co.
[illegible] Lyndale Avenue So., MINNEAPOLIS 19, MINN.
TAYLOR 3-7253

Why Have Other Enzyme Products Proved Inconsistent?

While enzymes are as old as nature, not long ago their addition to feeds was hailed as the latest development in faster animal gains. But then users began to be disappointed — college tests seemed inconclusive. In some cases they apparently worked, in others nothing happened. Until now we find most people don't want to hear any more about enzymes.

All these hopes for enzymes were not in vain. Enzymes are powerful growth factors. But just as gasoline is a powerful fuel, it takes a spark to activate it. And that's what makes ACTAFERM different. ACTAFERM supplies a complete enzymatic system **plus** an activating substance that acts as a sparkplug to release the most efficient work of the enzymes in the feed and already in the animal body.

That's the reason for the inconsistency in other enzyme products. The power is there, but it is released naturally on a hit-and-miss basis, just as gasoline will explode by spontaneous combustion.

NBC ACTAFERM

the Field-Proved and College-Tested ACTIVATED Enzyme System (Formerly called ACTAZYME)

Fifteen consecutive years of research on enzymes first discovered that enzymes must be activated for **consistent** results, then found the proper enzyme activator. No other enzyme product has it — and we have a patent pending on it. During the last five years we have run hundreds of field and college tests on the ACTAFERM **activated** enzyme system. These tests prove that you can expect **consistent** gains and lower feed costs because its complex enzymatic system regularly releases more of the nutrients found in feedstuffs, thereby assisting nature in more efficient low-cost feeding.

We know we are a small and obscure company — insignificant in comparison to the big names in enzymes. **But we've got something!**

See for yourself! Try ACTAFERM in your present formulation or compare it against other enzyme preparations. We offer a complete nutritional service, including tested formulations. ACTAFERM works successfully on poultry, hog, sheep and cattle feeds, and dog foods. Cleared for use in all feeds that have no F.D.A. restrictions.

WE'LL CHALLENGE ANY OTHER ENZYME PRODUCTS FOR CONSISTENT RESULTS:

- TOP FEEDING EFFICIENCY
- TOP QUALITY MEAT, MILK AND EGGS

RUN ANY TESTS YOU WANT WITH YOUR OWN FEEDS

We don't ask you to experiment with levels
We KNOW exactly what levels WORK in each particular feed.

NORTHERN BIOCHEMICAL CORPORATION, 100 Eleventh Street, Sheldon, Iowa

Sales Representatives

Amburgo Co., Inc. Philadelphia, Pa.
T. N. & T. Distributing Co. Costa Mesa, California
Franklin Lewis Co. Mesa, Arizona

WRITE FOR INFORMATION TODAY!

NORTHERN BIOCHEMICAL CORPORATION
100 ELEVENTH STREET, SHELDON, IOWA

Gentlemen:
I am interested in your ACTAFERM enzyme system.

- ☐ Have your representative call on me.
- ☐ I would like to arrange to fly to Sheldon to see your operation and the results of your tests. Contact me.
- ☐ Send material and instructions for tests on feeds for:
  ☐ Poultry ☐ Hogs ☐ Ruminants ☐ Turkeys ☐ dog food

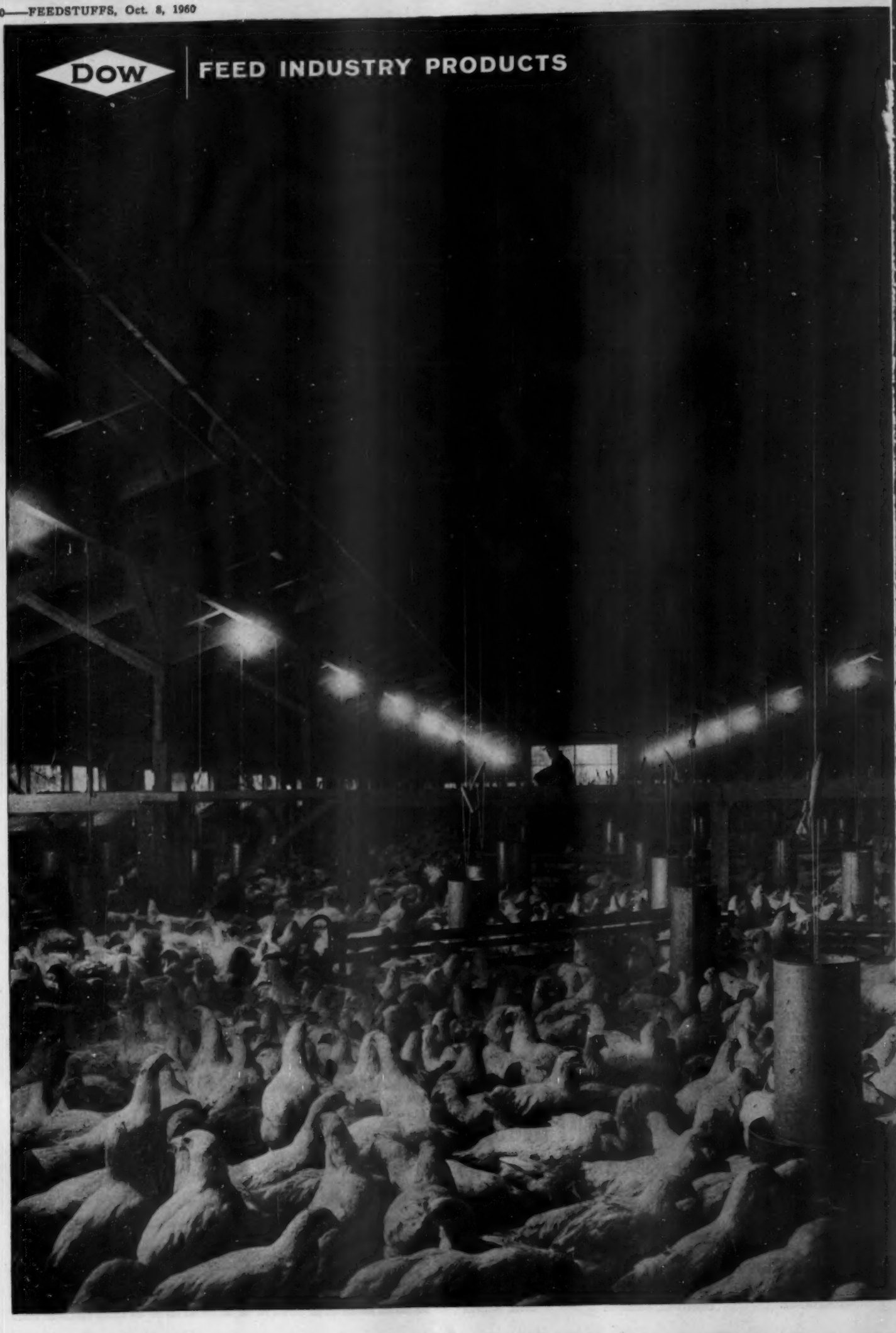
Name _____

Company _____

Address _____

City _____

DOW | FEED INDUSTRY PRODUCTS



Broilers on

ZOAMIX

get top "coccy" protection... require no withdrawal time

Feed manufacturers, independent research laboratories and college experiment stations have made Zoamix® a thoroughly pre-tested coccidiostat. Trials have been run since 1955.

If you're growing birds . . . protection and feed conversion are of prime importance. Zoamix is as effective as any presently available coccidiostat . . . more so than 8 of 9. Zoamix is effective against the strains known to cause outbreaks of coccidiosis.

The results of comparative feed trials are shown in the chart below. Very often 10,000 birds will return an extra $250.00 profit (frequently much more) over flocks fed other coccidiostats.

RATE OF GAIN AND FEED CONVERSION COMPARISONS

	Zoalene* Compared with Following Coccidiostats	A	B	C	D	E	F	Totals
	Number of Comparative Tests	29	15	16	23	5	6	94
NUMBER OF TESTS IN WHICH:	Zoalene Superior for Weight Gains	28	14	16	14	5	6	83
	Other Coccidiostat Superior for Weight Gains	1	1	0	8	0	0	10
	No Difference in Weight Gains	0	0	0	1	0	0	1
	Zoalene Superior for Feed Conversion	26	10	14	15	2	6	73
	Other Coccidiostat Superior for Feed Conversion	1	2	2	7	2	0	14
	No Difference in Feed Conversion	2	3	0	1	1	0	7

*the active ingredient in Zoamix

If you're formulating feed . . . you'll appreciate the margins of safety Zoamix affords. It's safe to switch from another coccidiostat without a growth setback. It's compatible with commonly used additive and feed ingredients and won't alter nutritional requirements. Although recommended for growing chicks only, Zoamix won't cause physical injury if mistakenly fed to other farm animals. Zoamix can be fed to replacement birds as well as broilers. Assaying is simple, speedy. Zoamix can be pelleted and repelleted, will not cake or lose potency even when stored for prolonged periods . . . or subjected to severe temperature fluctuations.

If you're a poultry processor . . . Zoamix can be fed right up to marketing time. No withdrawal time is required. Feeding Zoamix results in no change in hematology, histology or organ weights . . . nor will it impart any "off flavors."

You'll fret less . . . profit more by adding Zoamix. Stocks available now from several warehousing points. For aid in registration or technical service write: Feed Industry Sales Section, Agricultural Chemicals Department.

See "The Dow Hour of Great Mysteries on TV.

THE DOW CHEMICAL COMPANY
MIDLAND, MICHIGAN

FEED INGREDIENTS WITH *REAL* BENEFITS!

ACTION and INTEGRITY backed by EXTENSIVE EXPERIENCE

MC-47 (Condensed Beet Solubles)
MC-59 (Ammoniated Condensed Beet Solubles)
TORAFEED (Torula Yeast)
ADY-20 (Live Yeast)
SCHLITZ Brewers Grains & Yeast
FEEDPHOS (Defluorinated Phosphate)
C.F.S. (Corn Fermentation Solubles)
CLINTON Corn Gluten Meal & Feed
HaYaN Granite Grit
TAPO Oyster Shell & Meal
KELL PHOS (Colloidal Phosphate)
AVOSET Condensed Whey Solubles and Milk Albumin Product
MILEZYMES (Takamine Feed Enzymes)
Grains - Millfeeds - Grain By-Products
Animal By-Products
Oil Cake Meals

H. V. NOOTBAAR & CO. 3 Calif. Offices to serve you: Pasadena, 890 S. Arroyo Pkwy., MU 1-8491; Palo Alto, 667 Cowper St., DAvenport 6-2545; Bakersfield, P.O. Box 941, FAirview 7-2584

Fortify your feeds with

DIAMOND V BRAND

YEAST CULTURE

a natural source of

Digestive enzymes - B Vitamins including B_{12} - Unidentified Health and Growth factors - Values not obtainable from any other source.

For All Cattle, Hogs, Sheep, Chickens, Turkeys

Better Health, Growth and Production - Greater feed efficiency - Lower Feed cost

Yeast Culture values proven by state college tests

write . . . DIAMOND V MILLS, INC. • CEDAR RAPIDS, IOWA

Cattle Shipments to North Central Down

WASHINGTON—Stocker and feeder cattle and calf numbers shipped into eight selected North Central states during August were down 12% from the same month a year ago, the U.S. Department of Agriculture reports.

Shipments of stocker and feeder sheep and lambs into these states during the month also were off—11% —from a year ago.

Total stocker and feeder cattle and calves shipped into the eight states during August was 387,696 head, compared with 442,121 a year ago in August. Of the total cattle and calves received in these states during the month, 171,266 head moved through public stockyards and 216,429 head were received direct.

The combined July and August shipments this year totaled 636,745 head, compared with 770,054 head for the same period in 1959—17% lower.

Shipments of stocker and feeder sheep and lambs amounted to 473,867 head, compared with 428,779 head during August a year earlier. Of the total received during August, 125,241 head came through public stockyards and 348,626 head moved direct. The direct movement was 74% of the total this August compared with 73% a year earlier.

During July and August this year, 663,958 head of stocker and feeder sheep and lambs were shipped into these states, compared with 648,244 head for the same period last year.

Inspected shipments of stocker and feeder cattle from public stockyards during August totaled 443,000 head, compared with 438,000 head in August, 1959, an increase of 1%.

Inspected shipments of stocker and feeder sheep and lambs from public stockyards during August this year at 246,000 head were 7% below the 264,000 head for August a year earlier.

Kansas City Club Reports Golf Winners

KANSAS CITY—Joe Hanson, Percy Kent Bag Co., Kansas City, was winner of the low net prize in the blind bogey golf tournament which featured the Kansas City Feed Club golf outing recently at Oakwood Country Club. In second place was Joseph Joffee, Dannen Mills, Inc., St. Joseph, and third was captured by Joseph Tully, Ralston Purina Co., Kansas City.

Don Provow, Morton Salt Co., again took low gross honors, while high gross prize went to Kenneth Houston, Houston Feed Co., St. Joseph, who nosed out the previous holder of this title, Robert Stone, The Pillsbury Co.

Many other prizes were awarded at the dinner which followed the golfing and a cocktail hour. Richard Schoop, Albers Milling Co., president of the club, presented the awards.

Dr. Salsbury's Opens New Branch Office

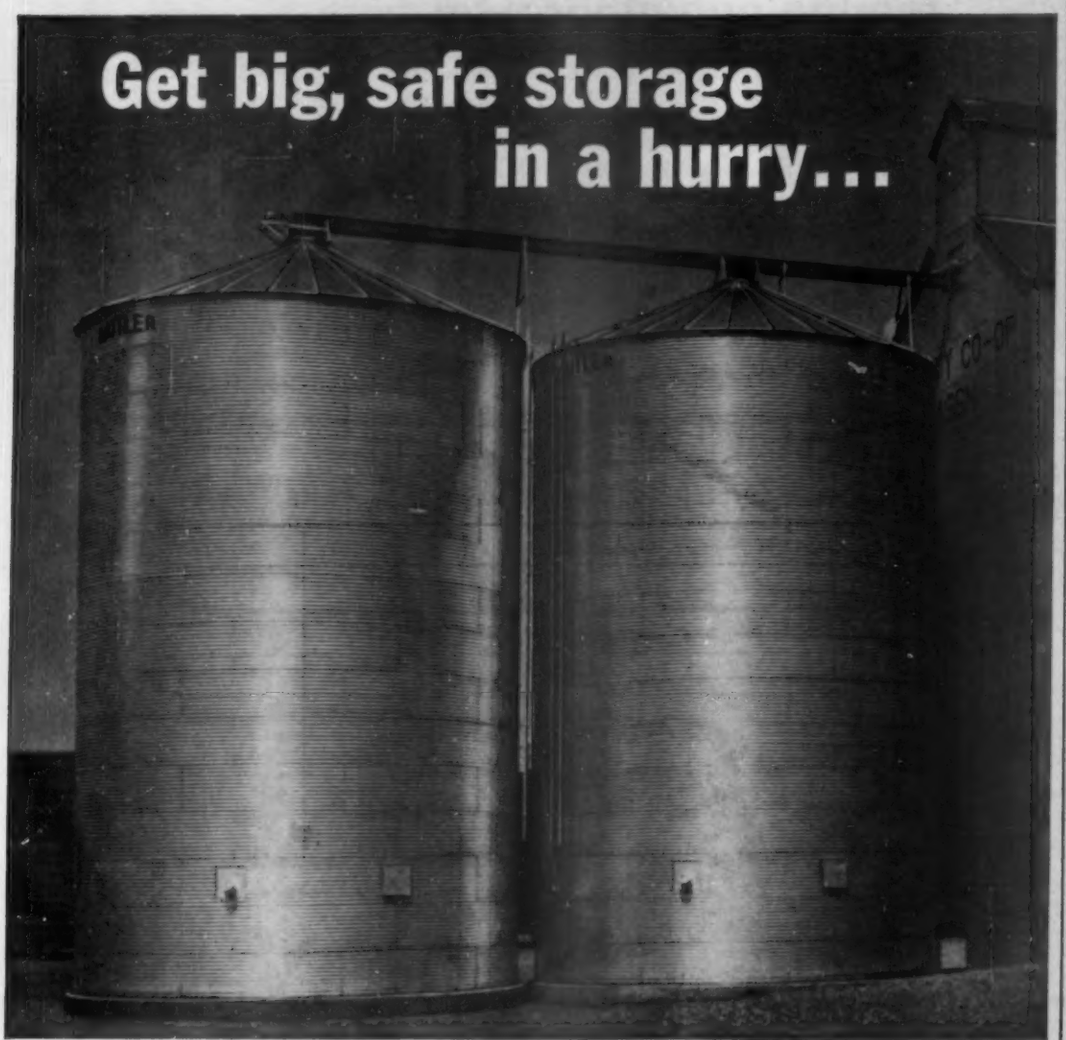
SAN JOSE, CAL.—Dr. Salsbury's Laboratories, Charles City, Iowa, has just opened a new distribution branch here.

T. W. Freeze, general sales manager, said the new branch replaces former facilities at Rosemead, Cal. Larger than the former branch building, the newly completed structure has 4,000 square feet of floor space.

The new branch is located at the hub of rail and truck transportation and will speed up service to customers in California, Nevada, Arizona, Washington, Oregon, Utah and Idaho, Mr. Freeze said. Address of the new building in San Jose is 190 W. Commercial Street.

Manager of the new facilities is James R. Davidson, former shipping clerk at Dr. Salsbury's North Kansas City branch.

The firm also has branches at Columbus, Ohio; Fort Worth, Texas; Atlanta, Ga., and Wilmington, Del.



With low-cost Butler Giant Bins!

Versatile Butler Giant Bins make excellent additional storage facilities. Available in sizes holding from 3,600 to 36,400 bushels of grain, these big bins are pre-engineered by Butler to assure fast, bolt-together construction. You save weeks of costly planning and erection time.

Ideal, too, for complete storage and handling facilities, Butler Giant Bins make it easy to segregate, grade and store grain in a low-cost-per-bushel installation. Hotspots can be quickly controlled with modern grain handling equipment.

An optional high-level catwalk makes frequent inspection possible.

Tight-fitting bolted steel panels keep grain dry, clean, and firesafe; eliminate weather, insect and rodent damage. Aeration, fumigation and cleaning are easily handled. You get safe, dependable steel storage . . . and Butler brings it to you at low cost per bushel.

Financing is available through your nearby Butler Builder, Dealer or Contractor. See him soon. Or write direct to us.

CELEBRATING 80 YEARS BUTLER FABRICATING METALS

BUTLER MANUFACTURING COMPANY

Dept. 402, P.O. Box 7027, 1820 East 63rd Street, Kansas City 13, Mo. • 902 Sixth Avenue S.E., Minneapolis 14, Minnesota
1012 Avenue W, Ensley, Birmingham 8, Alabama • Dept. 2, 2710 Butler Avenue, Richmond 1, California

Manufacturers of Equipment for Farming, Transportation, Bulk Storage, Outdoor Advertising • Metal Buildings • Plastic Panels • Contract Manufacturing
Factories at Kansas City, Missouri • Minneapolis, Minnesota • Galesburg, Illinois • Richmond, California • Birmingham, Alabama • Houston, Texas • Burlington, Ontario, Canada

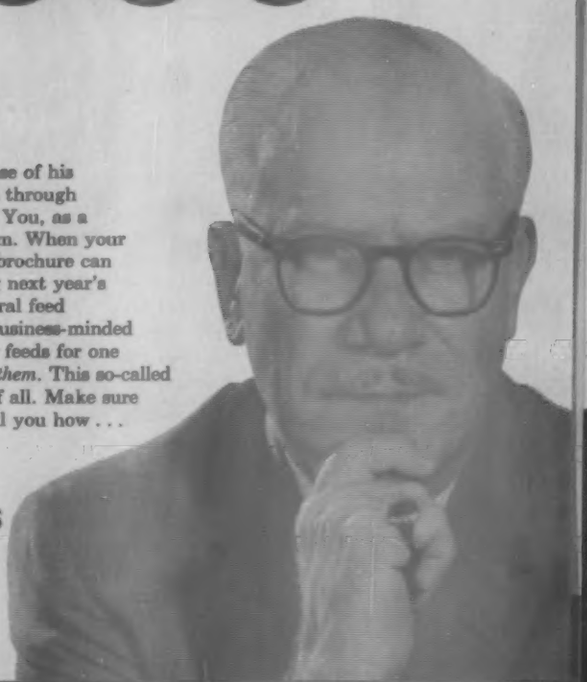
unless you are entirely satisfied with the bird you are now housing—and with the price you have to pay for it, tell your hatcheryman you want to try a flock of Mount Hope Queens right away.

Arbor Acres

Which additives?

Decision

Today's poultry grower is studying every phase of his operation, looking for ways to increase profits through higher feeding efficiency and product quality. You, as a feed man, are also concerned with this problem. When your customers profit, you profit. That's why this brochure can be helpful to you now, as you are formulating next year's feeds. In the next few pages, we describe several feed additives from Dr. Salsbury's Laboratories. Business-minded growers are asking for these additives in their feeds for one big reason: *because it is more profitable to feed them.* This so-called "grower profit test" is the most critical test of all. Make sure your feeds can pass it. The following pages tell you how . . .



Dr. SALSBURY'S LABORATORIES
Charles City Iowa

Unistat® is still the No. 1 coccidiostat–protects against all 3 common kinds of coccidiosis

Today, 2 out of every 3 broilers are raised on feed containing Dr. Salsbury's Unistat. In fact, over a billion birds a year get Unistat in their feed. Why has Unistat gained such widespread acceptance in less than three years? Because growers everywhere found that Unistat prevents coccidiosis best and that it profitably increases feeding efficiency.

Why does Unistat prevent coccidiosis best? Because its unique combination of ingredients gives unequalled protection against **all 3** common kinds of coccidiosis—those caused by *Eimeria necatrix*, *E. tenella*, and *E. acervulina*. No single drug has ever been found that equals Unistat's total coccidiostatic qualities. Unistat, in your feed for broilers and replacement chicks, assures your customers of protection against **all 3** kinds of coccidiosis, not just one or two. And Unistat also provides other profit-making extras, such as faster growth, increased feeding efficiency, and better pigmentation.

Start poults faster,
start them healthier,
grow them stronger

Polystat®

There is no other coccidiostat available with the wide range of associated benefits supplied by Polystat. It's the additive that gives your feeds the profit-making extras: poults gain more—*on less feed per pound of gain.* They start faster and grow into stronger, healthier birds. They're healthier because Polystat protects **against coccidiosis, large roundworms, tapeworms, bluecomb, hexamitiasis.** They're stronger because they don't suffer setbacks that go with these diseases. Then, too, there's a lot of time and trouble saved by getting all these benefits from just one additive: Dr. Salsbury's Polystat. With Polystat in your feed, your customers can forget about using a *separate* wormer, a *separate* growth stimulant, and a *separate* coccidiostat.

Scores highest
in weight gain,
feed efficiency,
fleshing, and
blackhead prevention

Histostat®*-50*

Turkeys need protection from blackhead from the time they go on range until a few days before market. Histostat-50 has been proven to prevent blackhead best and to give your feeds other important benefits. The 1959 Turkey Disease Control Report published by the University of Minnesota summarizes research showing that Histostat-50 *scored highest on every point:* It **prevented blackhead best;** Histostat-fed birds had **better fleshing,** they were best in **feed efficiency** among all commercially available compounds tested, and Histostat-50 birds had the **highest average weights** in the test. These are profit-building extras your feeds can provide. This year, more turkeys are being fed on Histostat-50 than ever before—and with a high degree of profit as a result.

Disease-fighting antibiotics team up for fast, economical weight gains— **STREPCILLIN F-25**

GIVE your feeds more disease-fighting benefits with Dr. Salsbury's new antibiotic feed additive, Strepcillin F-25. Strepcillin F-25 contains **6.25 grams procaine penicillin** and **18.75 grams streptomycin** in each pound. It stimulates fast, efficient gains because two antibiotics are better than one in protecting health. They work together as a team, each supplementing the other. Strepcillin F-25 gives pigs and poultry the boost they need for top profits—by helping them overcome the effects of today's high disease levels. Strepcillin F-25 can be mixed at different levels to stimulate growth and egg production, improve feed efficiency, and fight disease in chickens, turkeys, swine. Strepcillin F-25 in your feed works the clock around, fighting infection and building profits—for growers, feed manufacturers, and dealers.

3-NITRO®

—helps growing birds mature more quickly —helps layers produce more eggs on less feed—lowers cost of swine production

WITH Dr. Salsbury's 3-Nitro Powder in your poultry feeds, you are helping growers keep costs down and efficiency up. This is especially true of laying flocks. Records indicate that 3-Nitro-fed flocks lay up to a dozen more eggs per hen per year—on ¼ lb. less feed per dozen eggs. Depletion costs are reduced markedly as flocks show lower mortality and better all-around health. And all these benefits cost only pennies per layer per year. No wonder poultrymen everywhere are turning to 3-Nitro. Swine raisers, too, are asking for 3-Nitro in feed because of its many benefits. Tests have shown that growing pigs average 16% heavier—*on 5% less feed*, with 3-Nitro in the ration. Also, 3-Nitro reduces backfat, gives more uniform finish, reduces the number of runts and disease troubles. Whether for poultry or swine, 3-Nitro is safe, palatable, stable, and compatible with normal feed ingredients.

Just one pound of TRISTAT® *prevents 3 diseases in 3,000 chicks or 2,000 poults*

TRISTAT is a feed additive that aids in the prevention and treatment of *fowl typhoid*, *paratyphoid*, and *pullorum* in chickens and turkeys. It is mixed at the rate of 2 pounds per ton of an all-mash ration for prevention and at twice that concentration for treatment. Contains 75% active ingredient, *3, 5-Dinitrobenzamide*. Growers will like Tristat's efficacy, safety, and its economy of use. You'll like its stability and ease of handling. It presents no unusual mixing problem and is unaffected by steaming or pelleting. It doesn't lose potency during long periods of storage as a concentrate or in feed.

TINOSTAT® *prevents coccidiosis and hexamitiasis in turkeys*

TINOSTAT is a feed additive that contains 25% **dibutyltin dilaurate.** It may be given continuously for the first 10 or 12 weeks. By that time, turkeys generally have acquired an immunity to both coccidiosis and hexamitiasis. Tinostat is mixed in an all-mash ration at the rate of 3 pounds per ton. It is highly *effective* and *palatable, safe* and *economical*. It presents no unusual mixing or formulating problems. With Tinostat in your feeds, you can offer your turkey growers positive protection against two of the most troublesome turkey diseases, coccidiosis and hexamitiasis.

Wormal is a complete wormer—gets all 3 common types of poultry worms

Wormal Granules in your chicken and turkey feeds give your customers the most effective protection against costly worm damage. Only Dr. Salsbury's Wormal contains **dibutyltin dilaurate,** a drug that removes 3 times as many species of tapeworms—heads and all—as any other wormer. Wormal also removes between 95% and 100% of all large roundworms and cecal worms.

This kind of effectiveness is what growers expect from your feeds. It takes the guesswork out of worming and puts the profit in—for them and for you. You'll like Wormal's easy handling qualities. Granules are crumblized for easy mixing or may be added to feeds prior to pelleting. You can build tonnage and more big-ticket sales if your chicken and turkey feeds contain Wormal, the complete wormer that removes all 3 major kinds of poultry worms.

WAZINE® *Granules for fast, thorough large roundworm removal*

Mix Wazine Granules in your feed to help customers who want to get rid of large roundworms from chickens and turkeys, or large roundworms and nodular worms from swine. Wazine contains **piperazine,** one of the most effective anthelmintics known to veterinary science. Wazine is a low-cost, easily handled granule-type feed medication that is safe, palatable, and effective.

One pound treats 2,000 chicks 4 to 6 weeks old, 1,000 over 6 weeks, 1,000 turkeys, or 40 fifty-pound pigs.

Announcing...

NEW
VITAMIN A-30
and A-10
are stable,
low-cost sources
of Vitamin A
for all poultry
and livestock

Now you can get this all-important feed ingredient direct from Dr. Salsbury's Laboratories in two forms: "Vitamin A-30" (containing 30,000 U.S.P. Units per gram) and "Vitamin A-10" (containing 10,000 U.S.P. Units per gram).

These dry, stabilized palmitate forms of Vitamin A are encased in spherical beadlets ranging from 30 to 80 mesh in size. The beadlets have a gelatin-sugar-starch base and are mixed with yellow degerminated corn meal as a carrier. They are free-flowing for easy mixing when used to fortify feeds, premixes, concentrates, pellets, and other such products for livestock and poultry.

Vitamin A-30 and Vitamin A-10 are products of superior stability—they retain potency during feed formulation, handling, and storage. These new vitamin products are made, sold, and serviced *to bring you, the feed manufacturer or mixer, a most dependable, low-cost source of Vitamin A.*

New Vitamin A-30 and Vitamin A-10 are made to the same exacting high standards as the other famous Dr. Salsbury products described in this brochure.

Management and medication team up to make today's fine feeds even better

RULES FOR POULTRY AND LIVESTOCK MANAGEMENT

to help maintain good health and control disease

1. Select high-quality, disease-free livestock and birds. The best of feeds is no substitute for good breeding. And the end result (eggs or meat) is seldom any better than the genetic characteristics of the birds or animals growers start with.
2. Care for young animals or birds properly. This includes vaccination and all other such preventive measures. The grower who markets 99 broilers or turkeys out of a hundred takes every precaution during those critical first few weeks.
3. Practice good housekeeping throughout the year or life cycle of the animals or birds involved. This includes adequate housing, watering, heating, ventilation. It also means a strict sanitation program, clean pastures, and litter.
4. Give continuous attention to birds' and animals' nutrition so as to provide optimum disease prevention and growth stimulation. The most successful growers are those who reinforce good management with a sound feed additive medication program.
5. Observe flocks and herds daily, so as to detect health problems before they reach the epidemic stage. Nowhere else is timeliness any more important than in the field of disease control. Growers should isolate sick birds or animals immediately.
6. When trouble breaks out, get an accurate diagnosis at once. Competent diagnostic advice can be obtained through either state or commercial facilities.
7. Treat sick birds or animals promptly. Use a reliable recommended treatment in accordance with the diagnosis of the condition.

We, here at Dr. Salsbury's Laboratories, gladly subscribe to the above management rules. If followed faithfully, they will repay the poultryman or livestock raiser many times over through lower disease loss and higher profits.

They will enable your feeds to perform more creditably. In support of this belief, we are happy to make available to you the attractive, colorful certificate shown above. The actual certificate is 8½ by 11 inches and suitable for framing. Let us know how many you want.

Also, please write, wire, or phone for further information about any of the products described in this brochure.

Dr. SALSBURY'S LABORATORIES
Charles City Iowa

MANAGEMENT AND MEDICATION MAKE TODAY'S FEEDS EVEN BETTER

Pennsylvania Feed Tonnage Reported

HARRISBURG, PA. — Total commercial feed consumption in 1959 in Pennsylvania was 2,709,397 tons, the Pennsylvania Department of Agriculture reports.

Mixed feeds tonnage sold in Pennsylvania was listed as 1,653,963. More than half of this total, 948,213 tons, was made up of poultry feeds.

Individual ingredients sold in 1959 totaled 1,055,434 tons. Soybean oil meals comprised the largest tonnage for any single ingredient at 270,883 tons, followed by molasses at 166,112 tons.

Pennsylvania's Commercial Feed Consumption—1959

Mixed Feeds	
Kind	Tons sold
Poultry—	
Chick starter and grower	107,073
Breeder and layer	490,273
Broiler	171,196
Supplements	87,974
Other poultry	2,402
Scratch grains	43,019
Turkey feeds	40,993
Turkey supplements	5,083
Dairy—	
20% and under	260,792
21 to 32%	59,805
Concentrates	79,480
Other dairy	3,058
Calf feeds	21,830
Steer feeds	26,972
Swine feeds	39,050
Swine supplements	24,173
Sheep and goat feeds	399
Horse and mule feeds	14,342
Corn and oats chop	4,487
Dog food—	
Canned	48,822
Dry	58,359
Cat foods	1,649
Rabbit feeds	4,214
Duck feeds	1,891
Pigeon and bird feeds	3,086
Miscellaneous pet feeds	12,792
Mineral feeds	16,830
Mixed chop	4,242
Brewers grain mix	426
Other miscellaneous feeds	19,051
Total	1,653,963

Individual Ingredients	
Kind	Tons sold
Alfalfa products	37,481
Meat and bone scraps and meals	61,321
Tankage	5,350
Bone meal	8,097
Animal fat	7,441
Beet pulp	12,913
Brewers products and yeast	84,821
Corn gluten feed	91,076
Cottonseed products	12,201
Distillers products	25,632
Hominy feed	26,076
Linseed meals	15,406
Marine products	11,320
Milk products	2,723
Molasses	166,112
Oats products	14,270
Screenings, ground	3,518
Soybean oil meals	270,883
Wheat bran	82,179
Wheat middlings	42,143
Other wheat products	2,811
Citrus pulp	3,612
Other grain products	8,612
Miscellaneous ingredients	37,164
Total	1,055,434
Grand total	2,709,397

EXCHANGE PRICES ON TV

STOCKTON, CAL.—Stockton Grain Exchange prices are now being telecast over KOVR-TV, Stockton-Sacramento every weekday morning. In addition to the daily price reports, Channel 13 broadcasts the prices of the previous week and the summary Sunday morning.

2¼ Million Pounds of Turkey Sold to USDA

WASHINGTON—Bids on 2,250,000 lb. of frozen ready-to-cook U.S. Grade A turkeys were accepted by the U.S. Department of Agriculture for schools participating in the National School Lunch Program.

These purchases are being made with funds transferred by Congress from section 32 for use under the National School Lunch Act.

Cost of this week's frozen turkey purchase will be approximately $800,000. Prices ranged from 35.48-37.47¢ per pound, depending upon location.

Bidders offered a total of 5,910,000 lb. and USDA accepted offers from 12 of the 25 bidders.

This purchase brings the total during the buying program to 15,480,000 lb. at a cost of about $5.6 million.

USDA will accept additional offers of frozen ready-to-cook turkeys next week.

Report Staff Changes In Purina Departments

ST. LOUIS — Several personnel changes in the production and sales departments have been announced by the Ralston Purina Co.

P. C. Winslow, assistant sales manager of the south Atlantic division, with headquarters at Charlotte, N.C., has been named sales manager of the Illinois division, with headquarters at Bloomington, Ill.

T. M. Reese, a district salesman in Virginia, became manager of poultry chow sales of the eastern region staff, with headquarters at Alexandria, Va.

A. W. Johnson, superintendent of the Purina plant at Stockton, Cal., became superintendent of the Buffalo, N.Y., plant.

J. F. Ballentine, general foreman at the company's plant in Wilson, N.C., became superintendent of the Memphis, Tenn., Chow plant.

A. J. Hinrich, a staff engineer in the company's engineering department at headquarters in St. Louis, became soybean division engineer and will continue to headquarter in the general office.

All changes are now in effect.

Arkansas Firm to Open New Soybean Plant

STUTTGART, ARK.—The Arkansas Grain Corp. will formally open a new multi-million-dollar soybean processing plant here Oct. 15.

Described as "one of the largest and most modern of its type in the South," the plant will process a variety of soybean products, including 50% protein and 44% protein soybean meal, soybean mill feed, soybean mill pellets, crude soybean oil and lecithin.

Potential of the new plant is said to be "unlimited," because of the rapid growth of soybean production in Arkansas and the South.

L. C. Carter, Stuttgart, general manager, Arkansas Grain Corp. and the Arkansas Rice Growers Cooperative, said the new plant cost about $2.1 million. Of this, corporation members provided $1.1 million with stock purchases, and $1 million was borrowed from the St. Louis Bank for Cooperatives.

The plant will establish both domestic and foreign markets for its products, officials said.

Of concrete and steel construction, the plant has a capacity to process 8 million bushels annually. However, officials said the capacity can easily be raised to 10 million bushels.

Mr. Carter said much of the plant's soybean meal output will be used for supplying the large Arkansas poultry industry. He said the state's poultry operators are now importing more meal than the new facility can produce.

FORECAST—A forecast of "The Feed Business in 1970" was made by a panel of feed industry leaders at the second annual Feed Marketing Seminar in Chicago. Shown, left to right, are: I. S. Riggs, vice president, the Quaker Oats Co., Chicago (What Will Be the 1970 Picture in the Feed Manufacturing Business on the Matter of the Size of the Manufacturers?); O. W. Joiner, vice president, Kent Feeds, Inc., Muscatine, Iowa (Will Feed Manufacturers in 1970 Be Exclusively in the Feed Manufacturing Business?); E. D. Griffin, vice president, Allied Mills, Inc., Chicago (moderator); Claude I. Carter, vice president and general manager, Alabama Flour Mills, Decatur, Ala. (Will the Feed Industry Be Selling Any Complete Feeds in 1970?), and D. K. Webster, Jr., president, H. K. Webster Co., Lawrence, Mass. (Will There Be Feed Dealers in the Feed Distribution Picture in 1970?). The seminar was sponsored by the Sales Executives Council of American Feed Manufacturers Assn.

Packaging Discussed

ST. LOUIS—Representatives of 20 industrial firms met here to discuss problems and new methods of packaging, it was announced by Charles V. Brady of Bemis Bro. Bag Co.

Part of this meeting was a tour of the Bemis textile and waterproof bag manufacturing facilities. Bemis was host to the visitors at a dinner.

AFMA Distributing Soy Meal Guides

CHICAGO—Three recently adopted purchasing guides for soybean products are being distributed by the American Feed Manufacturers Assn. to holders of the AFMA purchasing handbook, "Feed Ingredient Purchasing Guide and Trading Rules."

The guides are for solvent extracted, expeller and dehulled solvent extracted soybean oil meal.

Indexed for more than a dozen major ingredient classifications, the red, loose-leaf binder was first published two years ago to carry purchasing guides adopted by AFMA's Nutrition Council and by its Committee of Purchasing Agents, as well as trade rules for five national allied industry groups. As new ingredient guides are developed, and as existing guides are revised, AFMA makes available to each book-holder the supplemental information for addition to the purchased handbook.

The handbook, currently in its third printing, may be obtained through AFMA. All additions since original publication appear in the binders now being sold to members at print cost ($6) and to others at print cost and service charge ($10).

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FEED MILL ENGINEERING SERVICE

IT PAYS TO BE A HUBBARD SUNSHINE DEALER

Shell-Tex, an ingredient contained exclusively in Hubbard's Layer Feeds, will give better shells, more marketable eggs . . . two important factors to poultrymen. Shell-Tex has been tested at Hubbard's Sunshine Research Farm and by volunteer feeders. It will pay you to contact your Hubbard's Sunshine Dealer for complete information.

HUBBARD MILLING COMPANY
CEDAR RAPIDS, IOWA MANKATO, MINNESOTA MARION, INDIANA

To Give Cost-Cutting Ideas at S. E. Feed Production School

ATHENS, GA. — A program designed to "provide money-saving ideas in your production program, regardless of the feeds you produce," has been planned for the first Southeastern Feed Production School to be held Oct. 23-25 at the University of Georgia (Feedstuffs, Sept. 10).

Harold E. Ford, executive secretary of the Southeastern Poultry & Egg Assn., urges those who wish to participate in the school to get their reservations in as soon as possible.

Reservations are being made through the association, 235 East Ponce de Leon Ave., Decatur, Ga.

Subjects on the program are designed to cover four major points: Materials handling, quality control, cost and motivating personnel.

Among the topics to be discussed will be: "How to Reduce Cost Through Work Sampling," "A Hard Look at Cost Standards," "Materials Handling," "A Practical Quality Control Program," "A Review of Feed Production School in Kansas City," "Grain Storage," "Intra-Company Communications," "Food Additive Amendments," "Pelleting Coastal Bermuda," "Empathetic Evaluation," "Liquid Handling," "Bin Flow" and "Trends."

All program participants will be available at designated hours for conference with individuals and small groups.

Co-sponsors of the school are the Feed Production School, Inc., Kansas City; the University of Georgia, Athens, and the Southeastern Poultry & Egg Assn.

Equipment Firm Sold

OTTUMWA, IOWA—L. E. Waterman Pen Co., Ltd., Canada, has purchased Barker Poultry Equipment Co. here, H. J. Hoxby, Cincinnati, president of Waterman, announced recently. Waterman is a wholly-owned subsidiary of WPC Enterprises.

Purchase price was reported to be cash and notes plus 150,000 shares of Waterman common stock. The Barker company operates one of the world's largest automatic poultry and egg processing systems.

Warehouse Completed

SIOUX CITY, IOWA — A new warehouse for Victor Feeds has been completed and a formal opening was held Oct. 1, according to Paul Wendt, owner and manager.

The facility will service Crete Mills, Crete, Neb., a subdivision of the Lauhoff Grain Co. The warehouse has a capacity of 50 carloads of feed and will load a semitruck in 10 minutes and unload a 30 ton car in 25 minutes.

Murphy Names New Division Sales Head

BURLINGTON, WIS. — Appointment of John V. Anderson, Irwin, Iowa, as southwestern Iowa divisional sales manager for Murphy Products Co. has been announced by L. J. Warren, vice president and general sales manager.

John Anderson

Mr. Anderson, a former vocational agriculture instructor, has operated successfully as a district sales-service representative for Murphy Products in the Irwin area for the past two years.

As divisional sales manager, Mr. Anderson will supervise and coordinate all sales, service and marketing activities for the "Murphy Cut-Cost" line of livestock feed concentrates in 28 counties located in southwestern Iowa, Missouri and Nebraska.

Cost of Steam Rolling Barley Is Analyzed

WASHINGTON — Information on the cost of steam rolling barley has been issued by Harold Roskamp, Roskamp Huller Mfg. Co., Inc., Cedar Falls, Iowa, Feed & Feeding Digest reports.

Mr. Roskamp says that his figures listed below, show a fair margin for the dealer and for the farmer, according to recent Arizona tests published in the Digest.

Costs Per Hour

Overhead:	
Depreciation	$0.44
Upkeep	.21
Interest on investment	.53
Power consumption	.65
Gas consumption	.50
Labor (approximate)	2.00
Total	$4.33

Income Per Hour

8,000 lb. production at 15c cwt.	$12.00
Profit per hour	$ 7.67

BIRTH ANNOUNCED

PHILADELPHIA — A 6½-lb. boy, David J., was born Sept. 10 to Mr. and Mrs. Marvin N. Golden. Mr. Golden is assistant manager of office sales service at the Amburgo Co., Philadelphia, and son of Samuel M. Golden, president of the firm. David J. is Sam's fourth grandchild.

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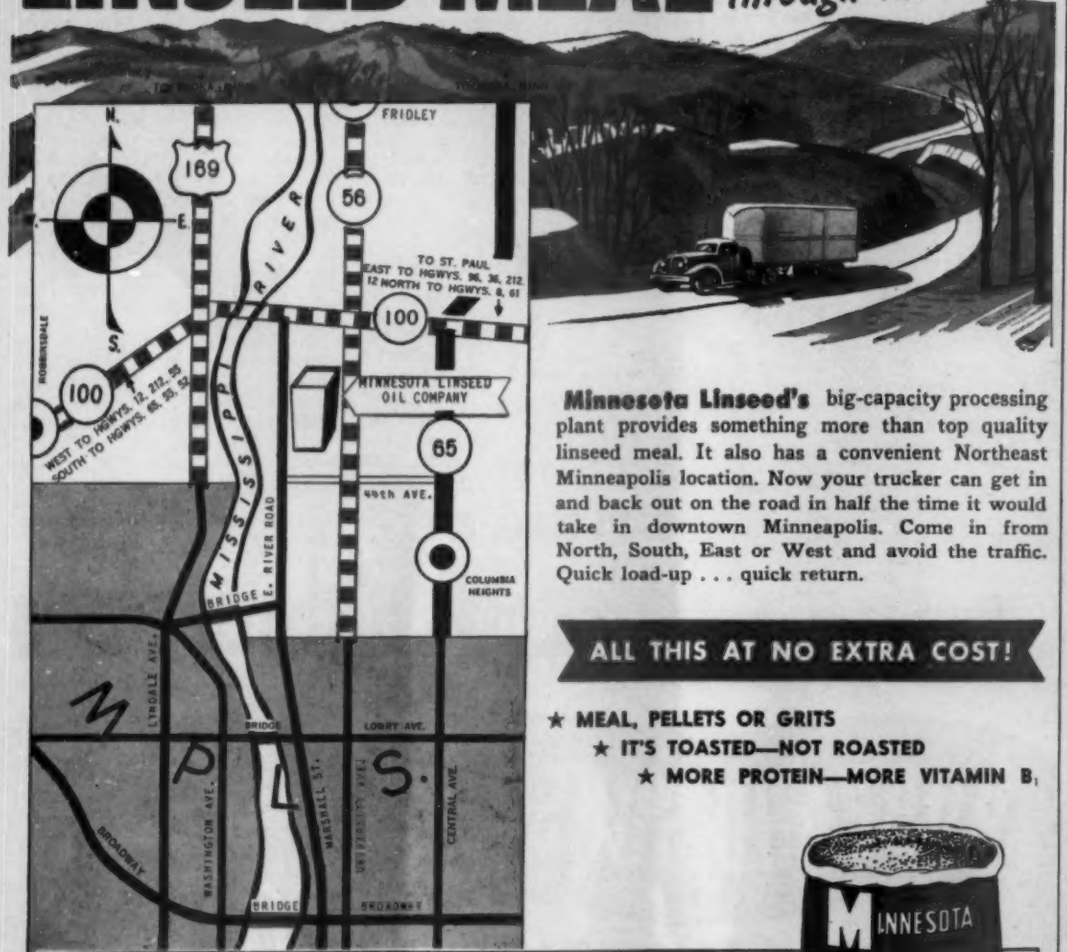
Pick up your LINSEED MEAL without driving through the city!



Minnesota Linseed's big-capacity processing plant provides something more than top quality linseed meal. It also has a convenient Northeast Minneapolis location. Now your trucker can get in and back out on the road in half the time it would take in downtown Minneapolis. Come in from North, South, East or West and avoid the traffic. Quick load-up . . . quick return.

ALL THIS AT NO EXTRA COST!

★ MEAL, PELLETS OR GRITS
★ IT'S TOASTED—NOT ROASTED
★ MORE PROTEIN—MORE VITAMIN B_1

Write . . . Wire . . . Phone for a Quotation

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'60 BONUS BONANZA!

NEW BIG PRIZES ON ALL PRODUCTS

$69.95 Elgin Watches!
Automatic Can Openers!
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WRITE TODAY! for your BONUS PRIZE BROCHURE!

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THEY COME *on the run...*

when feed palatability is improved with Milezyme* "on or off the sow"

Test results prove it: Milezyme improves the performance of all livestock and poultry feeds. The reason is that Milezyme enhances natural feed palatability. Animals and poultry eat more and gain faster . . . efficiently.

The most significant results have been shown in pig starter and prestarter feeds. A summary of all college and commercial feeding trials conducted with Milezyme in pig feeds shows palatability improved 7% . . . weight gains improved 9-10% . . . efficiency improved 2.5%. Weight gains in baby pigs of over 10% reflect an average response of a Corn-SBOM (no sugar) diet.

Used in swine growing and finishing rations, Milezyme improved both weight gains and feed efficiency by 5% . . . at extremely low cost.

Milezyme has also proved valuable in upgrading the feed value of Western barley, low-quality corn and other grains. It is already widely used for this purpose in commercial poultry feeds in the West.

What is Milezyme? Milezyme is a natural enzyme catalyst derived from B. Subtilis microorganism fermentation (not to be confused with pepsin of animal origin). Although essentially a protein, it is not added to feeds as a nutrient. The microorganisms are grown for their enzymatic activity, and are used to balance the enzyme activity lost during the period between harvesting and processing grain into feed.

Two Milezyme products are now available. Let us recommend the one that can add extra palatability and performance to your feed. Write for full facts today.

*Milezyme is not a drug and is exempt from the provisions of the Food Additives Amendment of 1958.

Milezyme T.M.
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Miles Chemical Company
Division of Miles Laboratories, Inc.
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AGENTS: The Calvin Baird Company, 809-11 North Market St., Chattanooga, Tennessee • Blomfield-Swanson, 6009 Wayzata, Minneapolis 16, Minnesota • James Farrell & Company, Hoge Building, Seattle 4, Washington • The Fox Company, Newfield, New Jersey • M. A. McClelland Company, Dwight Building, Kansas City 5, Missouri • H. V. Nootbaar & Company, 890 South Arroyo Parkway, Pasadena, California • Gladwin A. Read Company, 615 Davis Street, Evanston, Illinois • Frank Seitz Sales Company, 1510 Thirty-First Street, Des Moines 11, Iowa • John F. Young Company, Box 43, Station F, Cincinnati 4, Ohio • Sunset Feed & Grain Co., Inc., 805 Dun Bldg., Buffalo 2, N.Y.

WORTH LOOKING INTO

NEW PRODUCTS • NEW SERVICE • NEW LITERATURE

DESCRIPTIONS OF NEW AND IMPROVED PRODUCTS AND SERVICES PROVIDED BY MANUFACTURERS AND SUPPLIERS ARE PRESENTED IN BRIEF FORM. FOR ADDITIONAL INFORMATION, PLEASE USE THE ACCOMPANYING COUPON.

No. 7145—Moisture Register

Moisture Register Co. announces the "G-6" moisture register which it says is the fastest moisture test available on many granular, ground, powdered, loose or shredded materials. It is a refinement of the company's older model with a practical accuracy to 0%, the company says.

The unit can be used anywhere, the company says, saving laboratory and production time and requiring only one minute per test and no special skill or training. It employs high hydraulic pressure to assure a homogenous sample and is already calibrated for many materials. For more information, check No. 7145 on the coupon and mail.

No. 7147—Vitamin K Report

The Heterochemical Corp. has issued a report on a continuing study of the stability of Hetrogen K Premix. Five commercial broiler and five commercial layer mashes were fortified with Hetrogen K by using appropriate amounts of New Process Hetrogen K Premix. A higher than normal level that permitted assays to be performed (200 grams per ton) was used, it was explained by R. Berruti, technical director. The feeds were assayed after mixing and periodically after storage for four months. The data, said Mr. Berruti, shows that "this important vitamin is stable in these feeds." For additional information and for data, check No. 7147 on the coupon and mail.

No. 7148—Improved Milk Replacer

Improvements in its milk replacer base for use in special rations such as calf milk replacers, fish foods, pig pre-starters and other specialty feeds has been announced by the Feeds Supplements Division of Borden Special Products Co. "Borden's Hi-Hat MRB" now has better suspension characteristics when reconstituted in water and is lighter in color, the company says, giving the appearance of fresh milk. The product's crude fiber content has been reduced to 3%. In addition, the protein content has been increased to 40%. Earlier improvements, the company says, found the product's fat content from stabilized white grease and from lecithin was increased to 15%. The product is made by drying whey solubles on soy flakes under a rigidly controlled time and temperature heat treatment. They are then ground to a flour-like feed supplement high in milk nutrient value, the company says. It is available in 50 lb. bags with special inner linings. For more information, check No. 7148 on the coupon and mail.

No. 7140—Automatic Poultry Feeders

Chore-Time Equipment Co., Inc., announces the availability of a flexible poultry feeding system. Included in the system are two models of feeders, a single line feeder and a multi-line feeder. The monoline model is complete with a 200 lb. capacity hopper and power unit. The entire feeder, in lengths up to 184 ft., is suspended from the ceiling by chains. The multi-line feeder, for larger houses, can be installed with as many as eight lines in houses up to 600 ft. long. The feeder lines, pans and method of suspension are the same as the monoline model, but a central hopper is used with an automatic distribution system to fill all feeder lines. For more information, check No. 7140 on the coupon and mail.

No. 7146—Feeder Bulletin

A bulletin covering the most up-to-date information on the "Omega Hi-Weigh Belt Gravimetric Feeder" for continuous feeding of large quantities of dry materials has been announced by B-I-F Industries. The bulletin contains a detailed description of the feeder and its operation, including feeder performance specifications, principal dimensions and accessories. For copies, check No. 7146 on the coupon and mail.

No. 7143—Drying, Conditioning Unit

The "Habco Jetstream," a bin and crib drying and conditioning unit, has been announced by Habco Manufacturing Co. The fan has a "lift out" burner unit, the company says, making it convenient to handle because both fan and burner are contained in one shell. If the fan is to be used alone the burner unit can be unbolted and lifted out. The standard unit is 37 in. long and equipped with a quiet fan in either 18 in. (3 h.p.) or 24 in. (5 h.p.) diameters. The burner produces up to 250,000 BTU at 15 lb. pressure. It is available for either LP or natural gas and has a humidistat for automatic humidity control as optional equipment. All units are equipped with built-in orifice rings and automatic safety controls. For further information, check No. 7143 on the coupon and mail.

No. 7142—Reference Manual

Universal Hoist Co. has announced the publication of a bound catalog and reference manual containing information on its line of bucket elevators and trough-belt conveyors. It contains complete price, specification and dimensional data, the company says. For copies, check No. 7142 on the coupon and mail.

No. 7144—Bulk Feed Stations

"Seco Custom Designed Bulk Feed Stations" are now being offered by Seco, Inc. The size or capacity of a station to be designed and installed is not limited, the company says, and each station is designed for its specific use and location. A particular installation noted by the company (illustrated) has a storage capacity of

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is distributed by:

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Send me information on the items marked:

- ☐ No. 7140—Automatic Poultry Feeders
- ☐ No. 7142—Reference Manual
- ☐ No. 7143—Drying, Conditioning Unit
- ☐ No. 7144—Bulk Feed Stations
- ☐ No. 7145—Moisture Register
- ☐ No. 7146—Feeder Bulletin
- ☐ No. 7147—Vitamin K Report
- ☐ No. 7148—Improved Milk Replacer
- ☐ No. 7149—Bulk Feed Body

Others (list numbers) .....

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approximately 150 tons of material based on 40 lb. per cu. ft. material. It may be unloaded from either hopper cars or trucks at the rate of approximately 40 tons an hour. It is equipped with a 50-ton motor truck scale, although in some stations hopper-type scales are provided. For more information, check No. 7144 on the coupon and mail.

No. 7149—Bulk Feed Body

The development of a self-unloading "Hi-Molasses" bulk feed body has been announced by Henderson Manufacturing Co. According to the company, the unit, Model B-300M, is an all-hydraulic, cab controlled operation with the control panel mounted within reach of the operator from the truck cab. It permits the operator to unload into overhead bins and into hatches in dairy barn roofs. Special discharge auger allows unloading into bulk feeders, the company says. Four large augers in floor are individually controlled for fast unloading. It has a large 12 in. vertical auger with 9 in. final discharge auger, 16 in. long. The final auger raises, lowers and swivels hydraulically unloading up to a ton per minute of 40 lb. feeds. For complete information, check No. 7149 on the coupon and mail.

Also Available

The following new products have been described in previous issues of Feedstuffs and information about them may still be obtained by jotting the appropriate number of the coupon and forwarding it to Feedstuffs.

No. 7108 — Molasses mixer, Seco, Inc.

No. 7109—Range block press, Landers Mill Manufacturing Co. & Landers Machine Co.

No. 7110—Fan cooled motor, Brook Motor Corp.

No. 7111—Calf milk replacer, Borden Special Products Co.

No. 7112 — New crossbred pullet, Arbor Acres Farm, Inc.

No. 7113 — Research laboratory, Flo-Tronics, Inc.

No. 7114 — Grubicide Supplement, Moorman Manufacturing Co.

No. 7115—Pig starter display, Pay Way Feed Mills, Inc.

No. 7116—Storage bin leveler, Lennox Industries, Inc.

No. 7117—Farrowing stalls kit, W. D. Hines Co.

No. 7118—Lysine supplement, Merck & Co., Inc.

No. 7119—Booklet on Piperazine, Jefferson Chemical Co., Inc.

No. 7120—Poultry feed flavor, Flavor Corporation of America.

No. 7121—Level control bulletin, Flo-Tronics, Inc.

No. 7122—Molasses unit bulletin, Sprout, Waldron & Co., Inc.

No. 7123—Swine mixing salt, Morton Salt Co.

No. 7124—Mobile management bulletin, Seco, Inc.

No. 7125—Feed pellet binder, Cargill, Inc.

No. 7126—Feed flavor booklet, Flavor Corporation of America.

No. 7127—Bulk truck data, Sprout, Waldron & Co., Inc.

No. 7128—Enzyme approval, Merck & Co., Inc.

No. 7129—Adjustable elbow, Huss & Schlieper.

No. 7130—Conveying bulletin, The Day Co.

No. 7131—Equipment bulletin, Fuller Co.

No. 7132—Pallet booklet, Raymond Corp.

No. 7133—Broiler disease program, Chas. Pfizer & Co., Inc.

No. 7134 — Displacement blower bulletin, Sutorbilt Corp.

No. 7135—Pig anemia preventive, E. R. Squibb & Sons.

No. 7136 — Bulk truck bulletin, Sprout, Waldron & Co., Inc.

No. 7137—1961 "Feedmaker" model, J. B. Sedberry, Inc.

No. 7138—Calf milk replacer, National Vitamin Products Co.

No. 7139 — All-steel bin, Leach Manufacturing Co.

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DIVISION
F. H. Peavey & Co.
GRAIN SOYBEANS FLAX
Founded 1852
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MALT SPROUTS
BREWERS GRAINS
DISTILLERS GRAINS
BEET PULP
AND 44 OTHER FEEDS

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STILL AVAILABLE FOR GOOD DEALERS IN SOME AREAS

No matter how good your present program is, your customers must make money if you are going to be permanently successful. To do this in the feed business, a feed dealer must have not only a good feed, but also his customers must have good breeding stock, good equipment and good housing. Eventually someone will sell all four in your area — it might as well be you!

No other major feed company in America has this kind of a program to offer a dealer, WRITE, PHONE or WIRE for DETAILS.

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DEPENDABILITY...
in Quality and Service

New Poultry Trends in the South—Part 1

Broiler Production Shifting From Contracts to Salaries

By ROBERT H. BROWN
Feedstuffs Special Correspondent

The South seems to be definitely on the verge of some important changes in its poultry industry.

There are those in the industry who foresee the development of Dixie, where the broiler has reigned king for a good many years, as a more important factor in the commercial egg production field.

There are many signs that indicate, too, the development of plans for the production of broilers on a full-time salaried employee basis rather than on a contract foundation.

Dissatisfaction with contract growers is being expressed by many broiler and feed companies with big and small operations, and they are looking into the field of producing broilers with full-time workers on farms, either owned outright or leased.

There is considerable talk in rooms at feed and poultry conventions around Dixie about the type of contracts being made, getting efficient production from farmers at so much per bird and taking losses that growers don't necessarily risk. The feeling is increasing that instead of contract integration, feed men may as well assume the whole thing.

Shift in Risk

A panel discussion at the North Carolina Feed Manufacturers convention in Asheville hit the nail on the head when it was unanimously agreed that there is a need for a contract that would shift some of the risk to the growers as well as the financiers.

"It's got to come," said one feed man at the Dixie Poultry Exposition in Asheville, speaking on the subject of salaried workers producing broilers.

And so far as commercial egg production is concerned, it is the almost unanimous opinion of poultrymen that this is the only sane way to produce eggs.

"They'll steal you blind on a per-egg basis under contract production," said one feed man. He amplified his remark by telling about a north Georgia man who put in a big batch of layers and tried to manage it by remote control from his residence in Atlanta.

Robert H. Burch, of Burch's Trading Post, Clarksville, Ga., has about 20% of his broiler production handled by full-time employees.

"I'm adding to this production just as fast as I can add some additional land and facilities," he said. "I think it is the only way we are going to get the kind of efficient production we are going to have to have in this business."

At the present time, Mr. Burch, who is a veteran of the feed business, has 12,000 breeders and 28,000 broilers out.

He has three people on a salaried basis with one employee to a unit.

"I figure it is the only way to be sure the houses and birds are being looked after. If you go out to a contract grower and he is off on the farm tending a fence, and not the birds, there isn't too much you can say to him. But if he is on a salaried basis, you have a right to see that he does the work he is being paid for," Mr. Burch said.

Not only is Mr. Burch producing broilers and some layers on this basis but he is also producing a small amount of cattle the same way. All of his cattle are fed from his feed mill at the edge of Clarksville, which is operated separately from his combination farm store and supermarket.

Harold Ford, secretary of the Southeastern Egg & Poultry Assn., says reports coming to his office indicate an increasing interest in such broiler production.

"No doubt about it, there has been quite a bit of talk in the industry and it seems to be a spreading matter," he said.

Mississippi Starting Point

On-the-farm production, with the head of the house drawing a weekly stipend seems to have started primarily in Mississippi and has worked its way eastward through Alabama and is now making inroads into Georgia, he said.

In Mississippi, where such a plan is quite common, layers are on farms owned by the feed dealer, manufacturer or the egg concern. There is usually a tenant house on the land and the employee has the right to live in the house while tending the birds.

The remuneration is living facilities plus a modest salary.

Another large operation of this type is in North Georgia. This firm now has under construction six new breeder houses—fully insulated and vented.

The breeder houses will be used as part of the company's operation of producing its own broilers which already number close to half a million.

This is said to be perhaps the largest operation of its kind in Georgia and, as one official commented, it assures firm stable prices on hatchings and uniform production. It eliminates at least a portion of the unsteadiness of the hatching market, too, he said.

"I can't see that having a full-time employee in the houses is any different from having a full-time mechanic or a store clerk," he said.

Poultry and feed men alike seemed to be resigned to the fact that broiler prices are going to remain somewhere in the neighborhood of recent prices. That's around 17-18¢, more or less. Therefore, they are likewise resigned to the fact they are going to have to produce birds for the market at these prices and make money. They look upon salaried production

EDITOR'S NOTE: *Two developments are moving up front as among those most talked about in the South's poultry industry.*

One is the trend which involves feed men and poultrymen hiring full-time employees to operate leased or owned broiler farms — instead of handling production on a contract basis.

The other is the South's growth in egg production.

What observers within the industry think about these two trends are told in two articles. The first one, presented here, is concerned, primarily, with broiler production changes. Next week, Robert H. Brown, Feedstuffs correspondent, will tell what he's learned about the South's renewed interest in layer operations.

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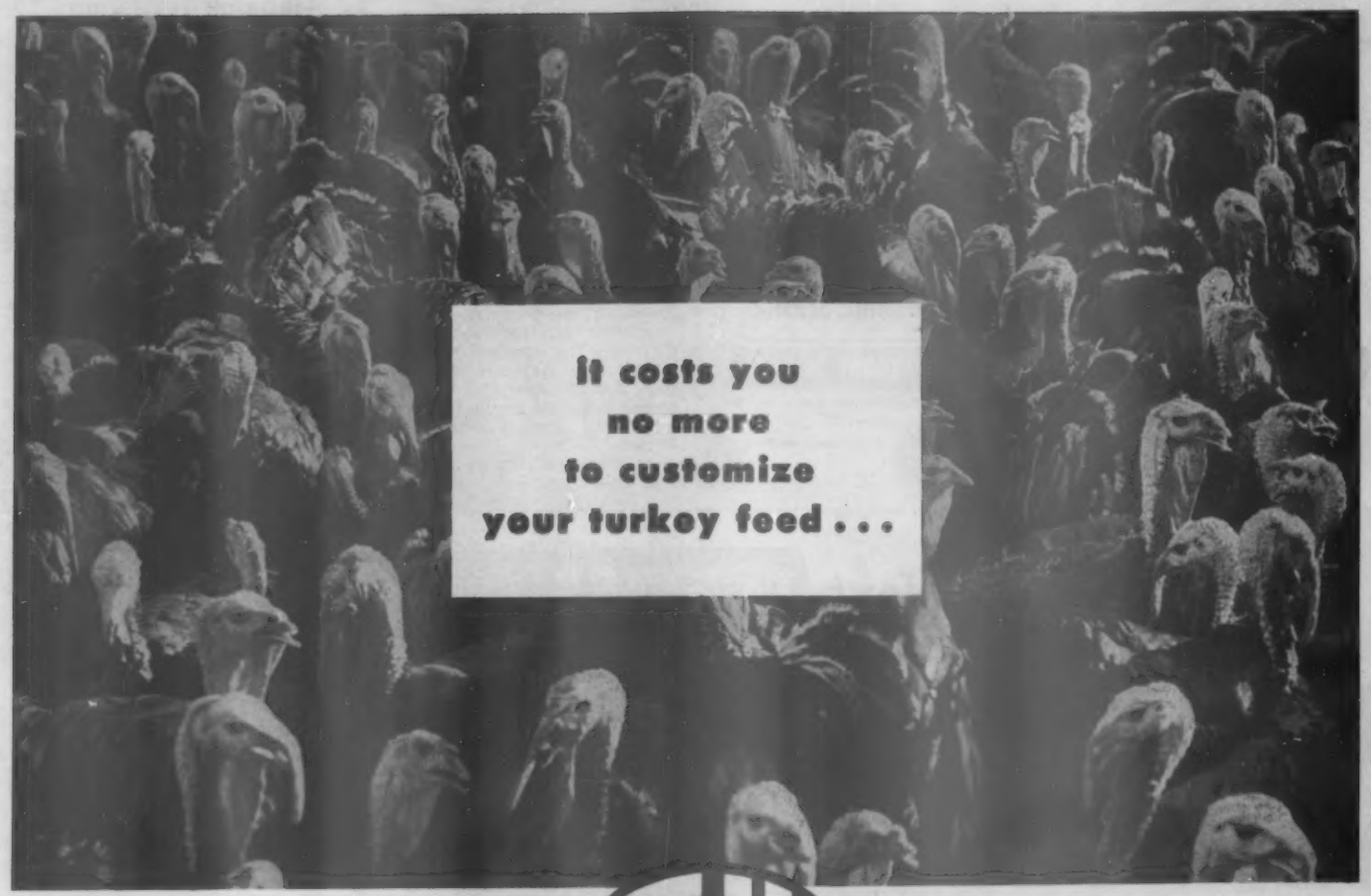

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as a means of stabilizing costs and they're hopeful of better quality and production, too.

Then there are those who also look into the crystal ball and believe that this type of production will do away with some of the headaches of constantly shifting growers who growl and grumble for better contracts. And, if they don't get them, move on to another operator who will pay what they ask.

Distributor Named

CEDAR RAPIDS, IOWA — Montgomery Body & Trailer Mfg. Co., Salem, Ill., has been named as a new distributor for Highway Equipment Co., here. The firm will handle New Leader lime spreaders, combination lime and fertilizer spreaders, widespread lime and fertilizer spreaders and mobile blenders in southeastern Illinois.

A branch is Broom Motor Co., Inc., Salem.

Alabama Nutrition Program Announced

AUBURN, ALA. — Fourth annual Alabama Nutrition Conference will be held at Auburn University here Oct. 20-21 under the sponsorship of the Alabama Feed Assn., Alabama Extension Service and the School of Agriculture.

The program on animal and poultry nutrition, as announced, will include the following: "High Concentrate Feeding Dairy Cattle," Dr. K. M. Autrey, Auburn; "Sound Feeding Dairy Calves," Dr. Arthur Winter, National Dairy Products Corp., Glenview, Ill.; "Fifty Years in Breeding and Swine Nutrition," Dr. Howard Tucker, Auburn, and Ray Cavender, Auburn; "Trace Element Nutrition in Ruminants," Dr. George Davis, University of Florida; "Problems to Consider in Formulating Poultry Rations Adequate in Amino Acids," Dr. H. M. Scott, University of Illinois, and "Developments in Research on Poultry Condemnation," Dr. S. A. Edgar, Auburn, and Robert Brewer, Auburn.

A banquet will be held Oct. 20 at 7 p.m. at Holiday Inn. Merlin Bryant, Brundidge Milling Co., Brundidge, will be master of ceremonies for the banquet.

Heads Monsanto's Additive Development

ST. LOUIS — Appointment of Dr. Kenneth H. Maddy as manager of development for chemical feed additives was one of three appointments announced in Monsanto Chemical Co.'s new agricultural chemicals division here.

Dr. K. H. Maddy

Other managers of development named were Dr. Lawrence H. Hannah for herbicide products and Dr. Paul F. Hoffman for fungicides and insecticides.

In making the appointments, James H. Senger, director of development for the division, said, "They should provide the level of experienced scientific and commercial supervision needed to assure that the new concepts and products of Monsanto's agricultural research are proved in practical application and made available to the farm market in the shortest possible time."

The new managers for farm chemicals development and the scientists assigned to each product group were in the development department of the company's organic chemicals division prior to the formation of the agricultural division Sept. 1.

Treasurer Appointed

NEW YORK—Remick V. Behrens has been named treasurer-controller of Chas. L. Huisking & Co., Inc., it was announced by the company.

Mr. Behrens succeeds Maurice S. Green who retired from the firm. He comes from U.S. Industrial Chemicals Co. and was previously associated with Dodge & Olcott, Inc.

The Huisking firm is a veteran importer-exporter and distributor of drugs, chemicals, cod liver oil and essential oils. It recently began producing chemicals for pharmaceuticals and proprietary drug products and specialty chemicals for the plastics, paper, electronics, metals, paint and textile industries.

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The entire test ran continuously for 549 days under the supervision of Kansas State University, and covered four feeding periods: pasture, winter, pasture, and finishing.

Feed used during the trial was identical—except the 12 steers in one lot received a plain salt-bonemeal mixture while the steers in the other lot received a mixture of bonemeal and Morton T-M Salt.

The cattle were weighed off pasture on August 1, 1959. Gain was only 8 lbs. per head greater for the cattle fed Morton T-M Salt. However, after a 134 mile trip to the feed lot in Manhattan, both groups were again weighed individually off the truck and the T-M fed cattle averaged 21.7 lbs. more pay weight than the cattle fed plain salt!

The first week in the feed lot the T-M fed steers lost 5 lbs. less than the steers on plain salt. Both groups were put on a 90-day full-feed finishing ration of ground corn, prairie hay and 1 lb. of soybean meal per head daily (containing 10 mgs. of diethylstilbestrol.) After a three week starting period, corn and prairie hay were available at all times on a free choice basis. The one group of steers continued receiving the plain salt-bonemeal mixture and also plain salt, free choice, while the other group continued receiving the Morton T-M Salt-bonemeal mixture and also Morton T-M Salt, free choice.

At the end of the finishing period all cattle were again weighed. The T-M fed steers showed an additional average gain of 23 lbs. *more* than the cattle fed plain salt.

After a 125-mile truck trip to the Kansas City Stock Yards, the cattle were weighed once more and the steers on Morton T-M Salt averaged 11 lbs. per head *more pay weight* than the steers on plain salt!

The cost of feeding Morton T-M Salt, free choice, at the feed lot was 35¢ more per cwt. of gain, with the *total* increased feed cost per head $1.19. But the steers on Morton T-M Salt gained 23 lbs. more during this period than the steers on plain salt and then added another 11 lbs. in pay weight at Kansas City, an average *total gain* of 34 lbs. per head! Comparing the cost of gain with Morton T-M Salt and a conservative selling price per cwt... the feeder is getting back more than $7 for every $1 invested in Morton Trace-Mineralized Salt!

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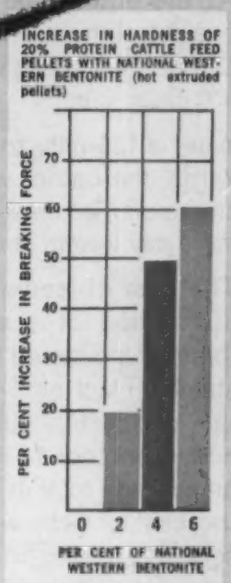

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INTEGRATED OPERATION'S MILL—This is the one-man push-button feed mill operated by an integrated southern growing-processing operation. One man operates the feed mill from the small building at the right. A bulk truck is being loaded with feed in the center and a semi-trailer loaded with corn is being unloaded under cover at the left. No feed is sold outside. A second man works outside unloading ingredient trucks and hopper cars.

Trend Toward More Feed Milling In Integrated Bird Operations Noted

By Charles L. Stratton
Feedstuffs Special Writer

A trend toward more feed milling among the integrated meat bird growing-processing operations, with installations of feed mills for mixing feeds (frequently from concentrates) for their own programs, was noted during a recent three-state trip.

Many feed firms indicated an inclination toward their own breeding programs in the near future also during the Virginia, Florida and Georgia trip. Also, some large table egg operators have shown interest in mixing feeds.

All but two of the operations visited on the three-state tour were meat bird operations. The two were a caged layer operation and a large market egg program owned by an independent poultryman. All operators were large feeders and, with the exception of one, had installed a feed mill within the past two years, generally within the past year, for varying reasons.

One firm, one of the first meat bird contract operations in that section of the country, now has around 800,000 birds on feed, split 50-50 between a company-owned farm and contract growers.

On the company farm, located a short distance from the firm's hatchery and about eight miles from the firm's processing plant, each man, using fully automatic equipped houses, has charge of 50,000 birds. Other employees help out with chores until birds are on automatic equipment, usually by the end of the first two weeks, then each man has full charge of his flock.

In contract operations, most operators indicated "standard local payments plus incentive."

Doesn't Own Mill

Although this firm doesn't own a feed mill, it is rather unique in its feed handling. One of the owners said, "You know we're Purina dealers. The local mill is only six miles away, and we deliver direct from mill to either company or contract farms in either bag or bulk."

This firm operates around a dozen trucks for delivery of feed direct from mill to company or contract farms. Except for the breeder flocks, located within a 30-mile radius, most of the meat bird farms are located less than a dozen miles from the hatchery and company farm.

The processing plant, handling about 25,000 birds in an eight-hour day, specializes in its own brand of fresh frozen poultry. This integrated operation recently hired a top geneticist and began its own breeding program. The hatchery operates at peak production year round, buying extra baby chicks from outside hatcheries to maintain processing schedule, allowing for a fluctuating seasonal processing schedule but still maintaining peak chick output.

Push-Button Mill

At another processing plant, an official expressed high regard for his push-button, one-man feed mill. "It lowers the cost of meat production and makes for closer control of feed moving onto contract farms," he said.

The feed mill, located a couple blocks away from the recently expanded processing plant, is equipped with two 2-ton mixers, mixing scales and a bagging machine in a compact unit in a neat concrete block building. Other than one man mixing and doing the office work, the feed mill requires one outside handyman to unload ingredients off trucks and railroad cars on siding.

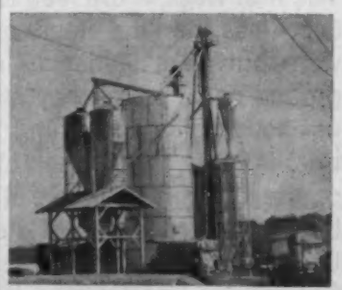
Storage capacity of mixed feed is 18 tons in four 4½-ton tanks. Ingredients are stored in four 30-ton tanks, while corn is stored in two 3,100 bu. tanks.

Corn feeds out of storage tanks into hammermill then into storage. Feed is mixed with Master Mix concentrates according to manufacturer's specifications. Special drugs also are used. The mill operator pointed out that he mixed medicated feeds according to flock requirements. All flocks are visited once weekly by the two servicemen and, when flocks require medication, the servicemen's recommendations are phoned in. Medicated feed is mixed fresh on order and shipped direct to the farm in one of the firm's two 9-ton bulk trucks.

Grain comes from south Georgia and the Midwest, "according to supplies—but mostly from the Midwest." Corn arrives in semi-trailer trucks. Concentrates arrive on feed mill siding in hopper cars, two cars weekly.

"Forced into Feed End"

"Forced into growing, then forced into the feed end," is the way this processor, processing about 150,000



SOUTHERN FIRM'S MILL—This feed mill can mix 60 tons of feed daily for a southern integrated operation. It is equipped with two mixers.

birds a week, explains his spreading integration. "We wanted a closer control of feed, as well as the material saving. At one time we purchased pellets; now we feed mash entirely. We don't sell feed outside—we mix for our own use exclusively."

Housing and equipment requirements on contract farms are "rather rigid." Growers' payments are based on feed conversion, but good growers should "average 7¢ per bird year round."

This processor works within the state, delivering ice-packed fresh dressed eviscerated poultry to stores. Like the other processor, this one, too, was optimistic and hinted at future expansion into a breeding program as another way of lowering competitive costs.

A third processor was also optimistic about the future. His plant was contemplating a 25% expansion and officials were checking on equipment in other leading processing plants.

This processor did not own a feed mill but worked on a three-way basis, purchasing three leading brands of feed, with the feed dealers servicing the flocks under the processor's direct supervision. The processor owns the flocks, some half million birds on feed. He feels that the competitive situation is better feed-wise, and finds he has obtained better results through this three-way program.

The processor owns a 100-ton bulk feed station to which feed is delivered. A local dealer helps deliver from station direct to contract farms. The firm also has its own bulk delivery truck.

He also has a working agreement with another feed company in which he furnishes baby chicks, the feed firm grows them out on its own contract farms, then sells them back to the processor. In other words, furnishing the feed firm with a guaranteed market.

The contract grower is "paid a brooding fee based on a per pound of meat basis plus an efficiency bonus —a good grower averaging 2-2½¢ per pound of meat." Growers range in size from 3,000 birds (part-time growers have outside jobs) up to full-time growers with 30-35,000 birds.

This firm, no newcomer to the business, processes up to 21,000 birds daily and ships direct to distributors within the state. Frequently poultry is on the dealers' shelves 12 hours after being dressed. It also has a good business in handling market eggs, mostly selling locally under its own brand as well as custom work under other brands.

What lies ahead? Processing capacity is to be increased 25% and the entire feed program revamped with plans for its own feed mill in order to mix feed for its contract meat bird growing program.

Another Operation

One franchised hatchery, included in several closely knit corporations on one farm, utilizes odds and ends of various flocks in a commercial caged layer operation, tied in with its own feed mill. The feed mill mixes an all-mash ration. The mill also includes a hammermill and bulk siding for rail delivery of concentrates, as well as fiber, corn and oats storage tanks.

Feed is mixed in 3-ton batches and delivered to about 10 contract farms —hatching egg, table egg and started pullet rearing farms—in 10-ton and 6-ton bulk feed trucks.

Feed is delivered to bulk bins outside each open cage house. Buildings are roofed and equipped with burlap roll-out curtains on the north side as windbreaks for winter use. There are no walls or other protection.

Table egg flock owners on contract are paid on a "per dozen basis with bonus on livability and feed conversion over an agreed upon normal figure."

Laying Operation

One independent flock owner, planning to expand from 20-40,000 layers, constructed his own feed mill of both new and used equipment for a reported cost of less than $5,000.

This mill is housed in a garage-like shed and consists of scales with 4,500 lb. capacity, a new 15-in. hammermill and a mixer. It is all-electric, push-button style, and one man can mix 4 tons an hour, the operator said. Storage capacity is being doubled from 30 to 60 tons.

This operator buys corn in Georgia and the Midwest, depending on lowest quotations. He uses a 20-ton semi-trailer for long hauls, a grain van for short trips. He hauls produce on the out-bound trip to sell in the vicinity of the corn pickup.

At home, corn is dumped into a circular concrete unloading pit equipped with an auger to draw corn into a storage bin. He can unload and store up to 25 tons of corn in 45 minutes with this setup. Concentrate is trucked in from nearby mills in bags and stacked under cover beside the mixer.

The only grain used in this poultryman's program is corn. He mixes

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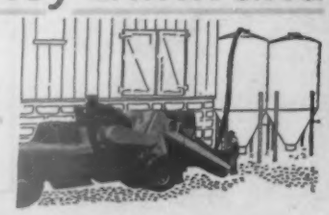
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1,500 lb. of corn with 500 lb. of 40% protein concentrate to the batch.

He said it takes him 15 minutes per ton to grind, mix and dump into the bulk truck—30 minutes per ton when he includes the time spent augering feed into the 10-ton bulk tank beside each large laying house.

Dropped Side Mixing

At first, this poultryman mixed on the side for strictly cash customers. Now he says, "They wanted credit, and I had to hang around all day as I didn't know when they wanted a batch mixed. I find I can make more by expanding my laying program and increasing my efficiency than I can soliciting feed sales."

Large Operation

A large integrated "1 million birds on feed" operation was one of the last places visited. One branch of the organization included the feed mill, hatchery, company-owned meat bird farm and a contract growing program. Another was processing and distribution.

Their feed mill operation uses Purina concentrates. When making their rated capacity of 60 tons of mixed feed daily, their saving in mixing their own and in labor is said to be about $700 a week.

This feed mill is equipped with three 30-ton ingredient tanks, one cornmeal and two concentrate tanks. The central elevator has a five-way valve and can also take in finished feed. Equipment includees two 1-ton horizontal mixers with scales over mixers and scales for bulk feed trucks. The bag feed was used the first three months of growing operation until the mill was completed. A 12-ton and 9-ton bulk feed truck are used.

Some 60 contract growers are located within a 75-mile radius of feed mill and hatchery. Growers' payments are based on a sliding scale of a 13-27¢ market price plus feed conversion. On a 16¢ market, grower payment is 6¢ a head; 18¢ market grower pay is 7¢, and 20¢ market is 8¢ per head. Conversion figures are different according to whether its winter, spring or summer. Pay is rated "better than average to maintain top growers." The grower furnishes house, electricity, labor, all equipment and gas heat.

A 110,000-bird company farm is in an isolated area, and the entire layout is filled or emptied of birds within two weeks, with no rotating flocks of various ages. This system tends to keep disease problems down. House size ranges from 10-12,000 birds, each being equipped with a 7-ton Butler bulk bin.

Says 'No Single Group To Dominate Guidance Of Turkey Industry'

CORVALLIS, ORE. — No single group will dominate turkey industry guidance in the future—nor will the industry follow a fixed pattern, predicted Noel Bennion, Oregon State College extension specialist, here at the 21st annual meeting of the Oregon Turkey Improvement Assn.

He said cooperatives, independent agencies and individual growers will have nearly equal influence.

Also, he declared that future influence of feed men would be offset by feed mixing by large growers and by financing through banks and credit associations. Producers staying in the business will grow larger and adopt more integration or tie-in programs, according to Mr. Bennion's forecast.

John W. Hough of Mt. Morris, Ill., editor of "Turkey World," said turkey processing had reached a point requiring schedules between processors and producers. He said live production must be fitted to quality and time specifications.

"The industry is working toward integrated operations involving production, processing and marketing," Mr. Hough said. "These operations are likely to be those of private companies, integrated for efficiency."

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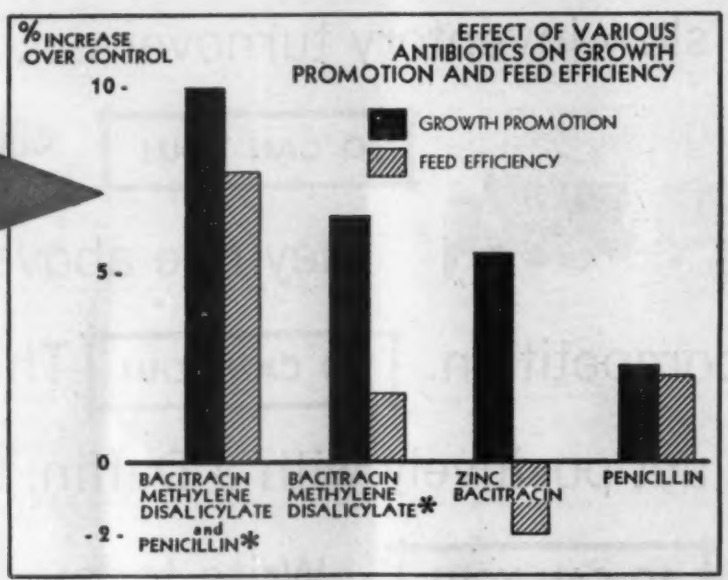

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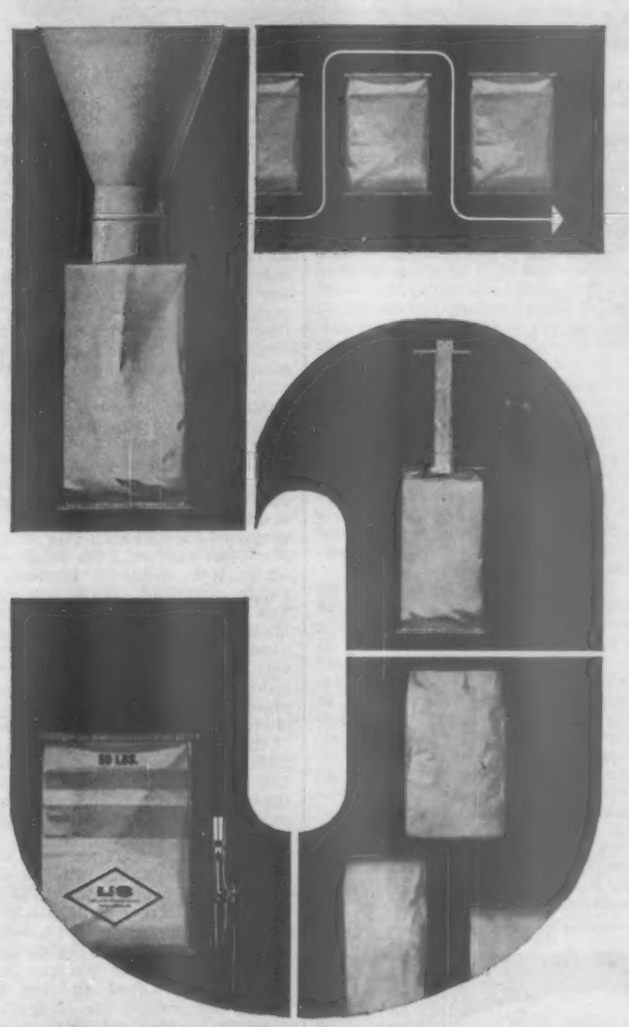

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Putting Research To Work

BY SPENCER H. MORRISON, PH.D., D. V. M.

Utilization of Phosphorus from Defluorinated and Colloidal Phosphate by Chicks and Laying Hens.

● J. N. Baruth, R. E. Davies, B. L. Reid and J. R. Couch, Texas A&M College; Poultry Science, Vol. 39, No. 4, pp. 843-849, July, 1960.

ABSTRACT AND COMMENT:

Considerable interest in the use of colloidal phosphate in poultry rations has been stimulated fairly recently by the possibility of using combinations of colloidal phosphate along with some other more readily "available" higher "quality" supplement such as dicalcium phosphate or good quality defluorinated rock phosphate. This is especially true since the publication of the work by Day and Associates of Mississippi (1959) and Watts and Miner of Louisiana (1959).

Day, et al., used soft phosphate to supply 25, 50 and 100% of the supplemental phosphorus in practical formulas for broilers, growing turkeys and laying hens. Defluorinated rock phosphate was the other phosphorus source. From the results reported by this group it was apparent that soft phosphate could be used to supply 25, 50 or 75% of the supplemental phosphorus in broilers using practical diets. A slight, though not significant improvement in growth was noted when 25% of the supplemental phosphorus was from soft phosphate. It is interesting to also note that the bone ash was not affected in these trials even when soft phosphate supplied all of the supplemental phosphorus even though growth was somewhat depressed when it was used in this manner. This would indicate that probably the basal practical diet was at least "marginally adequate" in phosphorus in the opinion of some.

In the laying hen experiments where soft phosphate was used to supply either 50 or 100% of the supplemental phosphorus, it was apparent that egg production, egg weight, livability and body weight gains were not appreciably affected by the source of the phosphorus or the system of feeding (all mash or mash-grain). This is not at all unexpected since it is very difficult to demonstrate phosphorus "adequacy or availability" using natural ingredients in the opinion of most informed investigators.

For turkeys, although it is possible that a certain amount of phosphorus stress was present from the 12th through 20th weeks (0.75-0.77% phosphorus), it was apparent that as much as 50% of the supplemental phosphorus could be from soft phosphate.

In the Louisiana trials replicated chick growth trials were conducted with pens of 180 birds, each receiving a practical broiler ration in which dicalcium phosphate or soft phosphate or a mixture of the two supplied 0.4% phosphorus. There was no effect on the eight-week weight, feed conversion, or livability for chicks fed rations in which soft phosphate replaced up to 75% of the phosphorus from mineral supplement. A seven months laying trial was also conducted in which soft phosphate replaced varying amounts of dicalcium phosphate up to complete replacement in the laying ration. No effects from the replacements were noted in egg production, feed conversion, daily intake, or livability until all of the dicalcium phosphate was replaced by the soft phosphate product. Although complete soft phosphate did not reduce daily feed intake or livability, it did result in decreased egg production and feed conversion.

The Texas work reported in the current issue of Poultry Science was only read by title at the annual meeting in 1959 and therefore has not been reported in detail until now. The first experiment with broiler type chicks using a milo-corn-soybean meal type of ration liberally fortified with sources of unidentified growth factors (UGF) compared the following sources of supplemental phosphorus: Colloidal phosphate, defluorinated rock phosphate (Butler) and dicalcium phosphate in various combinations compared with the basal unsupplemented diet. The diet used contained the following UGF sources: 2½% fish solubles, 2.5% dried whole whey, ½% antibiotic fermentation residue and 2.5% alfalfa leaf meal. The basal diet contained 0.43% phosphorus and the phosphorus supplementation from the different sources was at the 0.2 and 0.3% levels. One group received 0.2% supplemental phosphorus from dibasic sodium phosphate as positive control. The results of this study indicated that when colloidal phosphate was used in combination with either defluorinated rock phosphate or dicalcium phosphate to provide one-quarter of the added phosphorus, the growth rate was greater than that obtained when phosphorus was fed as dibasic sodium phosphate. Supplementation of the basal diet with soft phosphate, either alone or in combination with defluorinated rock phosphate or dicalcium phosphate generally resulted in an improvement in feed efficiency, indicating the possible use of this supplement in practical chick rations. There was also no indication that the chick required more than 0.2% inorganic phosphorus added to the particular diet used in this experiment containing 0.43% phosphorus and liberally supplied with UGF factors, with the calcium to phosphorus ratio at 2:1, containing 5% of animal fat and calculating approximately 20.3% protein and 878 productive energy calories. There would certainly be room for argument that the data reported by these workers could be directly transposed to practical modern-day broiler rations used in the field today in view of the rather low protein and energy content of the experimental diets. Also, use of soft phosphate takes up somewhat more room in the bag of feed than supplying phosphorus and/or calcium from more concentrated sources of phosphorus even after adjustments are made for differing calcium contents. Therefore, it is often necessary to use more expensive animal fat and/or dehulled soybean meal to equalize energy and protein—an important point certainly worthy of further consideration by research workers.

The second experiment was rather small scale in that only a total of 54 pullets were used divided into three groups placed in individual hen cages. The birds were fed a practical type diet containing 0.3% phosphorus from a ground corn-milo-soybean oil meal ration, liberally supplied with UGF (3% poultry by-product meal, 2.5% fish solubles, ½% delactosed whey, 2½% alfalfa leaf meal and ½% antibiotic fermentation residue). Calcium-phosphorus ratio in all diets was maintained at 2:1 and each diet was supplemented with 0.3% phosphorus as follows: No. 1—all defluorinated rock phosphate; No. 2—⅓ defluorinated rock phosphate and ⅔ soft phosphate; No. 3—⅔ defluorinated rock phosphate and ⅓ soft phosphate. Although the use of the colloidal phosphate in combinations with defluorinated rock phosphate had no detrimental effect on egg production, egg quality or phosphorus levels of yolk or blood, it did appear to produce a small increase in the amount of feed required to produce a dozen eggs when used at the two-thirds substitution level, during a 280-day production period.

It readily becomes apparent from the above work reported as well as the previous reports from Mississippi and Louisiana that soft phosphate is gradually finding its place in poultry rations. Certainly we need more research on rations of higher energy and protein content with broilers before blanket recommendations can be made for partial substitution of more concentrated sources of phosphorus with colloidal clay phosphate. Although much argument can be had as to whether or not it is "proper" to evaluate phosphorus supplements with practical-type diets because of their lack of critical "response curves" of sufficient magnitude, it is also equally true that performance and results on practical type diets are more important to the feed manufacturer. We therefore must keep an open mind on such results and cannot afford to ignore them.

Since hen requirements for phosphorus are much less critical than for growing birds, it is very likely that application of the results of the work will find greater acceptance quicker in the field. The work with turkeys is still not sufficient in my opinion to warrant any conclusion at this

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time, especially in view of the higher apparent phosphorus requirement for this species.

●

Timely and Worth Noting

Further confusion now appears to exist with respect to whether there is an effect on phosphorus availability exerted by ash(es) of unidentified factor sources. It may be recalled that as early as 1956 the Cornell group showed that the ash of unidentified chick growth factor supplements (ash at 2% level equivalent to 6% distillers dried solubles, 3% fish solubles, 3% dried whey products, 3% forage juice and 3% penicillin mycelium meal) caused an increase in bone calcification of chicks. Later reports by the workers at International Minerals & Chemical Corp. (1958) showed no such beneficial effect of the addition of such ash to even relatively unavailable phosphorus sources.

Texas workers have also been unable to confirm the findings of the Cornell group (Baruah, et al., Poultry Science, Vol. 39, No. 4, pp. 840-842) with respect to beneficial effects of unidentified growth factor ash added to a basal diet containing 0.34% phosphorus. The basal diet was of the corn-soybean oil meal type and the ash of the unidentified growth factors was prepared by combining equal parts of dried whey, distillers dried solubles, fish solubles, alfalfa leaf meal and dried brewers yeast after individual ashing. Levels of 0.2 and 0.3% phosphorus additional to the basal diet were supplied by either dibasic sodium phosphate, defluorinated rock phosphate, colloidal phosphate or ash of unidentified growth factor. Combinations of equal parts of U.G.F. and colloidal phosphate or defluorinated rock phosphate were also tested during the four-week twice-replicated battery trials.

Using the average data from 0.3% phosphorus and 0.2% phosphorus levels for the left tibial bone ash from six randomly selected surviving birds, the following percentages of phosphorus "availability" could be calculated using dibasic sodium phosphate as 100: defluorinated rock phosphate, 95.9; colloidal phosphate, 85.6; one-half colloidal phosphate and one-half UGF ash, 83.5; one-half defluorinated rock phosphate and one-half UGF ash, 88.2, and UGF ash, 88.5. It can be seen from the data that the UGF ash did not improve the "availability" of the phosphates, and indeed seemed to depress it slightly, confirming the International Minerals & Chemical Corp. work.

Des Moines Grain Exchange Elects

DES MOINES—Annual meeting of the stockholders of the Des Moines Grain Exchange was held Sept. 21. Robert B. Couch, Bates-Couch Grain Co., and D. D. Milligan, Grain Brokerage Co., were elected to the board of directors to replace Vaden Couch, Ralston Purina Co., and Lee Pamenter, Farmers Grain Dealers Assn., whose terms expired.

Officers as elected by the board of directors include: President, Curtis Twedt, Spencer Kellogg & Sons, Inc.; vice president, Robert Sargent, Sargent Grain Co., and secretary, D. D. Milligan, Grain Brokerage Co.

Open House Held at New Idaho Feed Mill

ROCKFORD, IDAHO — Modern Mills, Inc., here held open house Sept. 28 at its new $250,000 facility.

Modern Mills buys and sells all types of grain and has storage capacity to handle feed grains and facilities for shipping wheat, steam rolling, grinding, mixing, molassifying and pelleting grain and hay with added minerals, vitamins, antibiotics and hormones.

The firm will also handle supplements and concentrates to make any type of feed according to individual formulae of farmers or stockmen. General Mills, Inc., nutritionists and laboratory testing services are available to them, Melvin Olsen, manager, said. The firm will handle feeds in either bulk or bags.

Owners and board of directors are all farmers except the manager and the secretary, Dean Williams, Blackfoot.

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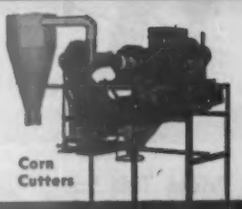
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UP OR DOWN

By Dr. Leonard W. Schruben, Agricultural Economist, Kansas State College

Milo Prices This Fall

Milo prices are under heavy downward pressure again this year. This is particularly true in the eastern edge of the sorghum area where yields reportedly have been running very high. Although it looked for a while as though storage would be quite scarce for milo it now appears as though a satisfactory roof will be found for this year's crop. In the main sorghum belt where conditions have been drier, there doesn't seem to be much of a problem.

In order for you to get a picture of month to month changes in milo prices, the accompanying exhibit has been prepared. It shows the month to month change in price of grain sorghum in Kansas from 1910 through 1953. The last six years have shown about the same pattern. Although it appears complicated at first glance, once you work through an illustration you will find it easy to use.

Here's how to read the exhibit: Each of the columns represents change in Kansas farm prices from one month to the next. Mid-month prices are used. Each dot above the zero line indicates a year in which the price went up, and each dot below the line indicates a year in which prices went down. The location of the dot indicates how many cents up or down prices changed.

For example, let's look in the column of changes from October to November. This would be the third column from the right labeled "October to November." You will find a dot at the plus-25¢ level. This means that during one of the years from 1910, prices advanced 25¢ bu. from October to November.

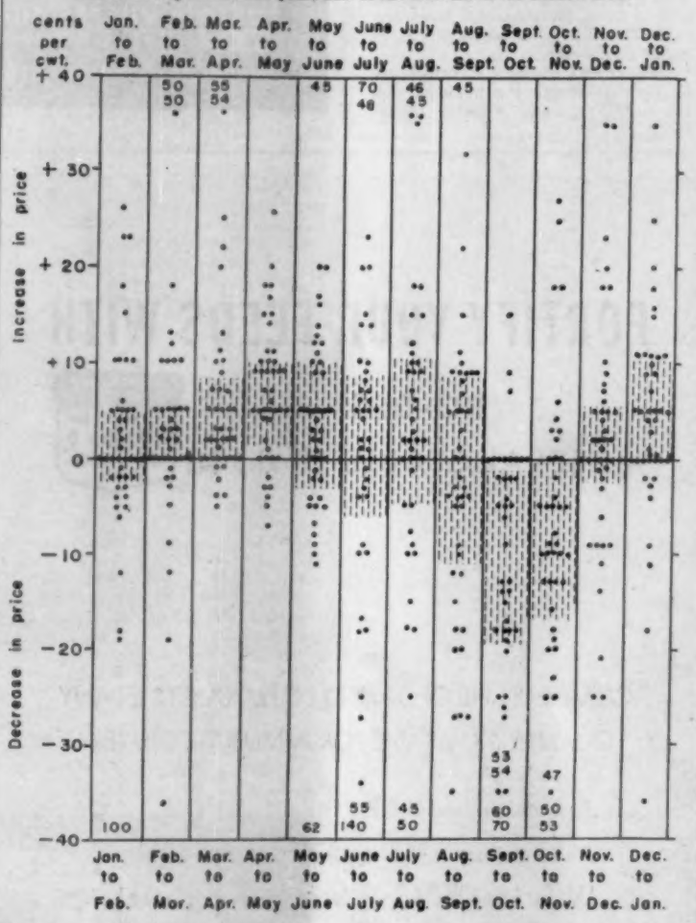
You will find three dots on the zero line. This means that during three of the years prices did not change from mid-October to mid-November. You'll also find two dots at the minus-25¢ level. This means that in two of the years prices went down 25¢ cwt. from October to November. Other months are read in the same manner.

One half of the dots are covered by a shaded area. This is the middle half.

Now take a close look at the October-to-November change. You will notice that in approximately three years out of four prices went down from mid-October to mid-November. The numbers at the bottom of the column show how much more prices went down than could be shown on the chart. In one year they went down 47¢ cwt., another 50¢ and still another 53¢ cwt. In other words, prices have generally tended to go down from October to November over the years. Beginning in November prices generally have trended upward more years than they have gone down.

Prospects this year are for some slight recovery of prices by the first of January. However, with the national crop totaling 590 millions compared to 580 last year, you can expect continued downward pressure on prices so that seasonal recovery will be limited. Enough price advance to pay cost of storage can be expected and maybe just a little more.

GRAIN SORGHUM—Monthly Change in Kansas Farm Price, 1910-1953
(Each dot represents one year; half of the dots are in the shaded area)



Washington Plans To Screen Feeds

OLYMPIA, WASH. — The Washington State Dairy Products Commission will spend about $25,000 for equipment and personnel to screen feeds and feed ingredients as to type of ingredient, geographical source and type of contamination, reports Allen Baker, supervisor of the grain and chemical division of the State Department of Agriculture.

The program is the result of the commission's "anxiety over possible pesticide contamination of milk by the ingestion of feeds by dairy cattle." It will be under the supervision of the State Department of Agriculture at the laboratory of the University of Washington.

Data of this type is extremely difficult to catalog, Mr. Baker points out. Coupling this difficulty with the technical problems already recognized, no answers can be expected for some time, he adds.

"Even when results begin to show a pattern, no effort will be made to discriminate against feeds or ingredients, except if planning and consultation with suppliers is not productive," says Mr. Baker.

In other words, efforts at correction will be addressed to feed suppliers. There is no intention of accepting samples submitted by dairy men for testing, nor supplying data to dairy spokesmen on a brand name basis, says Mr. Baker.

As residues appear in commercial feeds, the suppliers of the feed will be contacted on an individual basis.

British Manufacturer Licensed by Day Co.

MINNEAPOLIS — The Day Co. here has announced a new manufacturing and selling arrangement for its patented "RJ" dust filter, according to A. B. Osgood, president.

The firm has licensed Henry Simon Ltd. of England to manufacture and sell the "RJ" filter throughout the world exclusive of the U.S. and Canada.

Used in the milling and grain, chemical, atomic energy and wood processing industries, the filter will handle light or heavy grain loaded airstreams and filter fine, coarse, abrasive or non-abrasive dusts, according to the firm. Airstreams as high as 300° can be handled and through use of special alloys and media, higher temperature airstreams may be filtered, the company said.

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Well-Planned Plant Considered Essential

LEXINGTON, KY. — "One of the prime requisites of a good mill operation is a well planned plant," according to Vernon Hayes, who recently addressed the Kentucky Feed Conference here. Mr. Hayes is president of Hayes & Stolz Industrial Mfg. Co., Ft. Worth.

"I do not need to tell you that a great deal of careful planning must go into this if you expect to get the kind of feed plant designed that can produce mixed feed economically. I would like to say here, that I would strongly recommend a horizontal type batch feed mixer in any milling operation. Take your time in planning your feed mill. It is a major investment. It's also expensive to change if wrongly designed.

"I would like to mention a few ideas along the line of good planning of a small mill operation. If at all feasible plan a basement below your working floor level and put your horizontal batch mixer in this basement along with your grinding equipment pellet coolers, boot sections of the elevating equipment, if mechanical, and unloading conveyors. This will give you good use of gravity flow. It tends to cut cost. Your bulk hopper scales, your visual mixer, dump stations pelleting equipment, corn cutters and crimpers should be on the first floor level. I think you will find that it will require less operating personnel. Your scalpers, cleaners and feed dresser should be near the top of your plant to take full advantage of gravity flow system. In fact, take advantage of all gravity flow wherever possible."

To eliminate the contamination problem he recommended that mills with both formula milling and custom milling be planned carefully to keep the two from interfering with each other.

Mr. Hayes further commented, "Be sure that you have sufficient grain storage and if using bulk ingredients, other than grain, plan them carefully so you will have sufficient inventory between shipments and this can vary considerably in the area in which you are operating."

He recommended that even the small mill have one man trained to do maintenance work along with his regular duties to cut costly loss of production due to mechanical breakdown.

"The planning does not start and end at the mill proper," he commented. "A small mill operation, as well as a mill operation of any size, must be fully planned. This includes sufficient ground space for smooth flow of traffic, parking areas for customers' cars and trucks and company parking areas. This may not sound important, but there can be as much loss of time around a congested mill in traffic flow problems as there can be in an ill-planned mill or warehouse facility. Eliminate as much cross-flow traffic as you can. Provide drive-through unloading areas if possible, thus eliminating back-in areas. Many truck drivers leave a lot to be desired when it comes to backing."

Mr. Hayes also told those at the Kentucky conference to select their location carefully. "Plan your plant location away from residential areas; it might not be a problem now but as your community grows you will have more and more complaints from residents as to noise level, odor and dust," he said. "I have seen large and small plants faced with the alternative of either closing down operations or making major modifications to comply with new community ordinances. I do not mean to imply that you should choose a plant site that would not be conducive to your program or that most communities are not understanding, but it is a situation that requires good judgment."

Regarding plant appearance, he advised, "Your physical plant should present an attractive view for not only your customers but for prospective customers that you would like to have."

Going inside, Mr. Hayes recommends a well planned office area. In small plants where the customer picks up his feed, the wife many times comes along. There should be a place in the office "where she is welcome and where she can feel at ease while waiting for her husband to get his delivery of feed loaded on the truck."

Importance of warehouse size and location, availability to rail facilities and truck facilities was emphasized. He also warned against high warehouse areas where excessive labor is needed to stack bags. He said the extra labor cost would pay for additional warehouse space quickly.

Inspection Law Asked In North Carolina

RALEIGH, N.C.—L. Y. Ballentine, agriculture commissioner, says a compulsory state poultry and meat inspection law will be offered to the 1961 general assembly.

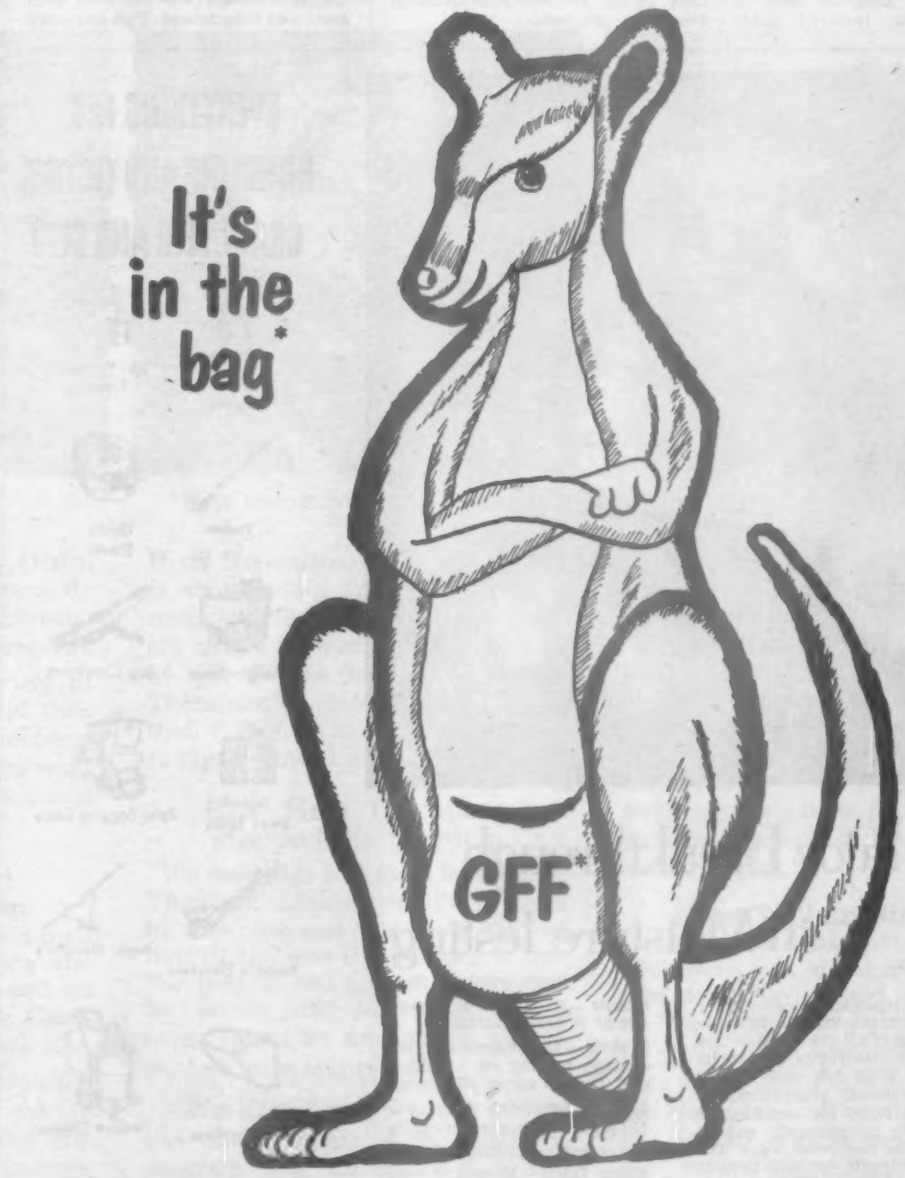
The commissioner presented the idea to the Advisory Budget Commission recently and asked $979,661 to operate the system in 1961-63.

Mr. Ballentine told the budgetmakers that about 20% of the poultry and at least half of the beef and pork packed in North Carolina goes to the consumer uninspected by either federal or voluntary state inspectors.

"The poultry industry has a greater degree of federal inspection," he continued, "since the major portion of North Carolina's growing broiler production is exported out of the state."

The commissioner added that his department wants $330,487 for the poultry inspection system and $649,174 for the meat inspection system in 1961-63.

He also asked for $604,075 in 1961-63 "to enrich other programs of the department, mostly for part-time labor at research farms."



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MINNEAPOLIS

Hog Producers Hear Reports On Missouri Research Results

COLUMBIA, MO. — Missouri hog producers attending the fourth annual Swine Day program recently heard reports on swine research work underway at the University of Missouri and saw some of the animals being used in the studies.

The one-day event was held on the university campus by the college of agriculture's animal husbandry department.

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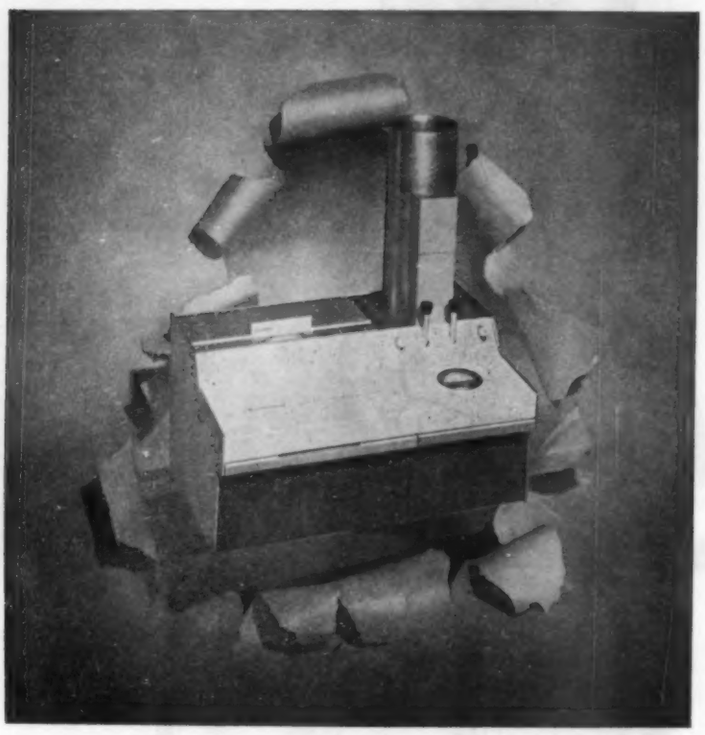

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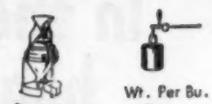
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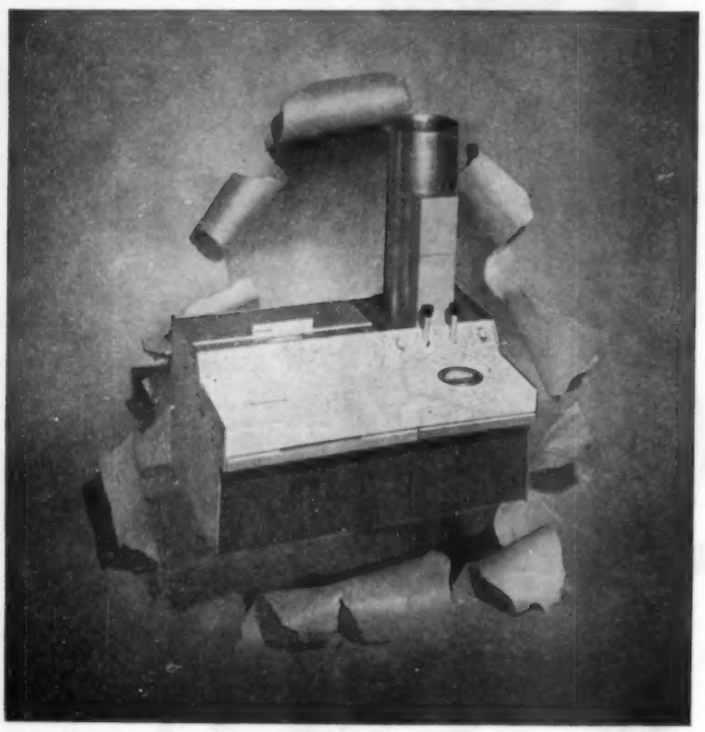

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of ½ gm. per head per day for a 10-day to two-week period starting three to five days before the start of the breeding season.

SELECTING BREEDING STOCK ON BACKFAT — Selecting swine breeding stock on the basis of backfat alone did not affect gaining ability in the first year results of a long-time study at Missouri. A report of this study was given by Mr. Zoellner. The project to determine results of selecting for backfat only was started in the fall of 1958 when 30 sows and gilts were selected from the university's Poland China herd. They were bred to good quality Poland boars.

Pigs from the 1959 spring and fall litters were raised in confinement and fed by litters. All pigs were probed for backfat thickness at 175 lb. and the pigs with the thinnest backfat were selected for breeding stock for the next generation.

"The encouraging thing about our first two litters is that the pigs selected as having the least backfat gained as well or better than the fatter pigs," Mr. Zoellner reported.

As the study progresses, the researchers will watch carefully what happens to the productiveness of this stock as this selection for backfat continues. They will be especially interested in size and vigor of litters and rate and efficiency of gain in the litters.

"If this method of selection proves to be effective, it could be used by Missouri swine producers to greatly increase the meatiness of their hogs," Mr. Zoellner said.

LIMITING GRAIN FED TO SOWS — Limiting the amount of grain fed to sows and gilts increased the number of pigs they farrowed and weaned, provided adequate amounts of protein, vitamins and minerals were supplied, said Mr. Dean. He reviewed results of a group of experiments on the effect of normal and limited levels of feeding during gestation.

The limited-fed groups received from one half to two thirds as much corn as the groups on normal feed. Actual consumption was 2-3 lb. of corn per head per day for the limited-fed group compared to 4-5 lb. for the normal-fed group.

Limited fed sows and gilts farrowed an average of 8% more pigs and weaned 22% more pigs than sows and gilts on normal rations. However, pigs from the normal-fed sows and gilts averaged 3 lb. heavier at weaning.

Mr. Dean stressed the need to supply adequate amounts of protein, vitamins and minerals. He noted that where the levels of these essential nutrients were allowed to drop below acceptable standards in the limited rations, the number of pigs farrowed and weaned was reduced. The advantage of restricted energy levels showed up only where adequate protein, vitamin and mineral levels were maintained.

Only enough grain should be fed to maintain the desired condition and to make the desired gain in weight, according to Mr. Dean. In these experiments, results indicated that the best reproductive performance was obtained when gilts gained 80-100 lb. during gestation.

Sows and gilts fed a limited amount of grain during gestation tended to eat more feed when self-fed during lactation than those fed a normal level of feed. But the difference in feed consumption during lactation was not enough to offset the smaller amount of feed consumed by the limited-fed sows during gestation. On the average, the limited-fed sows and gilts ate 155 lb. less feed during gestation and lactation periods.

Normal-fed sows and gilts averaged about 20 lb. leavier at weaning time than the limited-fed groups. Normal-fed groups gained weight during gestation and lost during lactation while the limited-fed groups gained some during both periods.

After farrowing, these sows were switched on to full feed with good results by turning them on self-feeders for one to two hours twice a day, starting the fourth day after farrowing.

EFFECT OF GOOD MANAGEMENT—The effect of good management on size of litter was stressed by Mr. Day.

He pointed out that litter size is only about 10% heritable. That means litter size is about 90% dependent on environmental and management factors.

Mr. Day also stressed that litter size can mean the difference of a profit or loss for the hog producer. It costs very little more to feed a sow that produces a litter of 10 pigs than one that produces five pigs, he noted.

Three major factors affect litter size, according to the University researcher. They are number of eggs produced by the sow, number of eggs fertilized and death losses during pregnancy.

Mr. Day made two suggestions for increasing the number of eggs produced by the sow. One was to let gilts go to their second or third heat period before breeding. Tests have shown that the number of eggs produced increases steadily between 5½ and nine months of age.

Increasing feed intake, commonly called flushing, two to three weeks before breeding will also increase number of eggs produced, he said.

A fertile boar will fertilize nearly all the eggs produced, according to Mr. Day. "Main precaution is to not use a boar that has inherited defects even though he is fertile."

Main way to prevent death losses during pregnancy is to keep sows from getting too fat. Mr. Day said sows should gain ½ to ¾ lb. per day with the higher figure applying especially to gilts. "It's important to keep the energy intake down while supplying sufficient protein and minerals," he said.

Research now underway may some day produce other methods for increasing litter size. Missouri scientists are experimenting with the use of hormones during pregnancy to see if litter size can be increased this way. (See another report.)

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insemination of swine was discussed briefly by Mr. Day. He said that many of the advantages of artificial breeding of cattle apply also to hogs —wider use of superior sires, small producer need not own a sire and less disease spread from herd to herd.

However, several big problems need solving before artificial insemination will be widespread in swine herds. Boar semen cannot be stored much longer than one day. Neither can it be frozen successfully. The restriction to use of fresh semen eliminates many of the advantages of this breeding method.

Another problem is to detect the beginning of the heat period in sows and gilts. Research on control of estrus and ovulation may some day answer this problem.

Mr. Day said many of the answers to these problems will probably be worked out in the not-too-distant future.

DISEASE-FREE PIGS—Most swine producers have never raised a group of completely normal, disease-free pigs, a University of Missouri veterinarian said. In his discussion of disease-free pigs, Dr. Kintner said some veterinarians have gone through college and have had a swine practice for years without ever seeing a perfectly normal pig lung.

Dr. Kintner said a method has been developed by which this chain of disease transmission from disease carrier sows to baby pigs can be broken. "For the first time in the history of concentrated swine production, pigs can be raised that are free of virus pig pneumonia, atrophic rhinitis, bloody diarrhea, external parasites, non-specific enteritis and transmissible gastro enteritis," he said.

"The method involves taking the pigs from the sow by surgery."

Because of the absence of such diseases, particularly virus pig pneumonia, these pigs, under ordinary farm conditions, are more hardy, more robust, more resistant to common soil-borne diseases and grow more rapidly on less feed than the so-called healthy pigs found on most farms, Dr. Kintner said.

"These disease-free pigs will go to market a month earlier on 200 lb. less feed than the pigs you have at home," Dr. Kintner said. These pigs are called "specific pathogen free pigs" (SPF).

The big hazard that will be faced in maintaining the herd free of the diseases mentioned is the movement of humans and pigs, Dr. Kintner said. Visitors, truckers, buyers and veterinarians will have to use special precautions to avoid tracking in disease. There can be absolutely no contact with other pigs such as at boar testing stations, sales, shows or by borrowing boars.

The program is still small and only several years old, but to date there have been no unexpected outbreaks of the diseases mentioned previously in SPF pigs, Dr. Kintner reported.

Six individuals or corporations have been licensed to produce primary SPF stock in Missouri. Individuals that start with this primary stock can raise them under ordinary farm conditions and sell secondary SPF stock, providing they qualify under a program set up by a SPF committee. Only pigs from herds that meet strict requirements on rate of growth, backfat thickness and freedom from disease can be sold. These efforts will be rewarded by a premium price for the SPF pigs.

"It is likely that SPF pigs will create a number of problems, maybe as many as they solve, but the evidence is that ordinary pigs cannot compete economically with SPF pigs," the university veterinarian said.

ADAPTING A PRODUCTION SYSTEM—Making a profit on hogs depends to a large extent on adapting a production system to fit the individual farm, said Dr. Tribble. He noted that no one system is best for all farms.

In his talk on general swine management, Dr. Tribble discussed various production systems.

Dr. Tribble recommended a multiple farrowing system on farms where hogs are the main source of income. Some advantages of multiple farrowing are greater use of buildings and equipment, spreads out labor load, one boar can service more sows by staggering breeding dates and reduces speculation and spreads producer's income, he said.

However, Dr. Tribble said multiple farrowings demand more planning, and they may cause labor conflicts with other farm enterprises. Also, the producer on multiple farrowing will take an average price rather than being able to shoot for price peaks.

Comparing central farrowing houses with portable facilities, Dr. Tribble noted that the central house is more expensive initially but it has a longer life. Portable houses cost less to start with but upkeep is greater and they won't last as long. Over the long run, there's not much difference in the housing cost per sow.

However, central housing offers many conveniences which, Dr. Tribble said, "make life a little more enjoyable, especially at farrowing time."

Is it better to use sows or gilts to raise pigs? Dr. Tribble said both have advantages. Sows produce larger litters, more milk, heavier pigs at weaning, have some disease immunity and the overhead costs per pig are less.

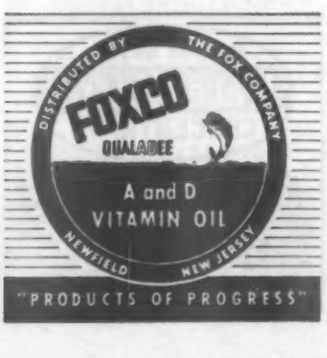
Gilts have higher sale value, a capital gains tax advantage, and they wean a higher percentage of pigs (but not enough higher to offset the bigger litters from sows).

"When all things are added up, the advantages seem to be in favor of using sows," Dr. Tribble said. "I believe that in many cases, sows are sold too soon while they're still capable of producing big economical litters.

"Don't cull sows or gilts on the basis of one litter. Too many factors affect the size and vigor of a litter to make one litter a reliable culling guide."

Most producers will probably get better results by staying away from extremely early weaning—say 3-4 weeks of age. Dr. Tribble recommended waiting at least until 5 weeks of age before weaning.

On the subject of production in confinement, Dr. Tribble noted that



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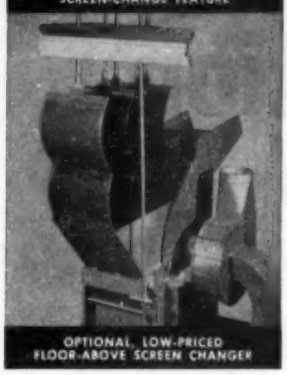

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SELLIN' SAM — By Jim Zilverberg

"My advice is to snap it up at the carload price, and then go out and buy more hogs!"

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a producer doesn't have to produce entirely in confinement or entirely on pasture. A producer may want to go to confinement after weaning, after pigs have reached 75-100 lb. or maybe just for the final finishing period.

CARCASS VALUE INDEX— Quantity of lean meat, quality and market value of pork are rolled into one index figure in Missouri's Ham Equivalent carcass value index.

Developer of the new index, Dr. Zobrisky, explained the evaluation method. "This new way of reflecting the merit of a hog carcass sidesteps human biases," the meats specialist explained.

The Ham Equivalent of a carcass is expressed in terms of the value of all cuts of the pork carcass as related to the value of the ham. Therefore, the H.E. of a given hog multiplied by the price of ham is equal to the dollar value of the hog.

Here are the steps Dr. Zobrisky uses to determine H.E.:

"(1) Hogs are handled alike in respect to feed, water and rest for 24 hours prior to slaughter. Pre-slaughter management is important, since it can cause dressing percentage to vary drastically, and this percentage is an inherent part of the H.E.

"(2) After slaughter, carcasses are chilled and processed according to strict standards. Carcass dressed weight can vary 15-20 lb. by changing dressing procedure. Humidity, air flow, temperature and time held in chill room can influence carcass weight several pounds. Also, cutting and trimming methods influence weight of cuts. Therefore, standardized methods are a must if reliable results are to be obtained.

"(3) Finally, the percentage of each wholesale cut (live or carcass basis) is multiplied by approximate index figure. This figure for each pork cut is based on the average weekly wholesale price for each cut for years 1957-59. The sum of cut indexes then gives the Ham Equivalent index for the hog. As the meatiness of the pork carcass rises, so does its H.E."

Dr. Zobrisky explained that the H.E. index is unique in that it is kept up-to-date simply by adding latest wholesale cut prices.

The Missouri-developed Ham Equivalent is looked on as "a valuable tool in the evaluation of test hogs," he said.

ULTRASONIC SOUND WAVES— A swine producer can't always tell how meaty a hog is just by looking, contends Dr. Zobrisky. He said that many animals show outward signs of meatiness, but come up at slaughter time with a high fat percentage.

So, if a breeder can't rely on what Dr. Zobrisky calls the "eye-ball" test

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for meatiness, how can he find out about his breeding animals? Slaughtering won't help because then the breeding stock is dead, he said.

The meats researcher says that ultrasonic sound waves is one of the most accurate ways short of slaughter to determine meatiness in animals. And one of the non-destructive instruments that measure by the ultrasonic principle is the Sonoray. Dr. Zobrisky demonstrated the university's Sonoray to Swine Day visitors.

"The electronic device may be a great aid in increasing effectiveness of breeding programs," said Dr. Zobrisky. "The increased accuracy would permit speedy selection of meat-type breeding stock, and reduce time needed to produce superior lines."

HOG OPERATION SPECIALIZATION—Hog operations will tend to get larger and more specialized in the years ahead. But there will continue to be some relatively small operations in cases where hogs in limited numbers fit into a good over-all farm management pattern, said Mr. Bauman.

He said that on farms where it fits, intensifying the hog business is an effective way of increasing efficiency. In a recent study of 130 swine farms in Indiana, he found that on the average, farms with 50-60 sows (two-litter system) produced hogs at less cost than those with either more or less than this number.

However, he found the lowest cost producer, considering individuals rather than size groups, had about 30 sows. Mr. Bauman said this indicates it is possible to get maximum efficiency well below the 50-60-sow enterprise size.

"Further developments in science and technology probably will result in some further increase in the herd size necessary for lowest costs of production," Mr. Bauman said. "Farms where hogs are a major enterprise will find it an advantage to further centralize and intensify hog production facilities and activities. This especially applies to periods when sows are farrowing and pigs are in the nursery."

Both complete confinement and pasture systems have a place, the economist continued. The system that is best depends on the individual farm.

If pasture is used in the hog program, Mr. Bauman said a permanent farrowing house, which requires less labor, combined with portable nursery and growing-finishing facilities is the least cost combination for 20 or more sows. This is especially true for the producer who plans to stay in the business long enough to warrent the higher initial investment for permanent farrowing quarters, he added.

Investment and annual use costs per sow are reduced substantially as hog facilities are used more intensively, Mr. Bauman said. Most of the savings have been attained with three groups of sows, farrowing two litters per year. Going beyond this intensity is probably not wise on most farms, the economist advised, since management problems multiply rapidly as the number of groups goes up.

As for outlook, Mr. Bauman said hog production will continue to be a business of ups and downs in profit margins. The short-run price and profit outlook is quite favorable; the longer-run outlook is as favorable as for other livestock, he said.

Dehy Production Up 4% Through August

KANSAS CITY — Dehy production to the end of August, four months, exceeds that of a year earlier by 33,400 tons or nearly 4%, according to the American Dehydrators Assn. Bulletin. It was reported that inventories are about 76,600 tons greater than last year at this time, up about 18.8%.

Disappearance by the close of August was about 10,000 tons less than a year earlier and close to the average of five preceding years. Disappearance for the month of August alone was just 1,100 tons less than a year earlier.

Industry sources report the price is running about 84% of the five year average.

September production lower than a year ago is expected in some areas. Among dry areas are: Ohio and Indiana and parts of Illinois, Michigan, Kansas and Iowa. It is considered that rains now would be too late to save the situation. Serious reduction in tonnage will probably not show up until October, according to the association bulletin.

The bulletin commented that if the production had continued at the accelerated pace, there might have been a serious oversupply by the end of the season. It further stated that with the drouth that now besets many producing areas, the situation may be alleviated.

August production was down in four states according to the bulletin. They were: Iowa, 1.7%; Missouri, 14.0%; Nebraska, 3.2%; and Texas, 26.2%. All other states were ahead with Ohio leading the pack with a 37.7% increase in August over August, 1959. Kansas and Colorado were ahead of last year by slightly more than 11%.

Dr. Salsbury's Sets Poultry Short Courses

CHARLES CITY, IOWA—A new series of four-day poultry short courses has been scheduled by Dr. Salsbury's Laboratories.

Clarus M. Galloway, short-course registrar, said chicken short courses are slated for Oct. 17-21, Nov. 7-11, Feb. 6-10 and Feb. 13-17.

The course is designed for hatcherymen, feedmen, growers and others interested in poultry diseases. A concentrated course in disease recognition, prevention and control is presented.

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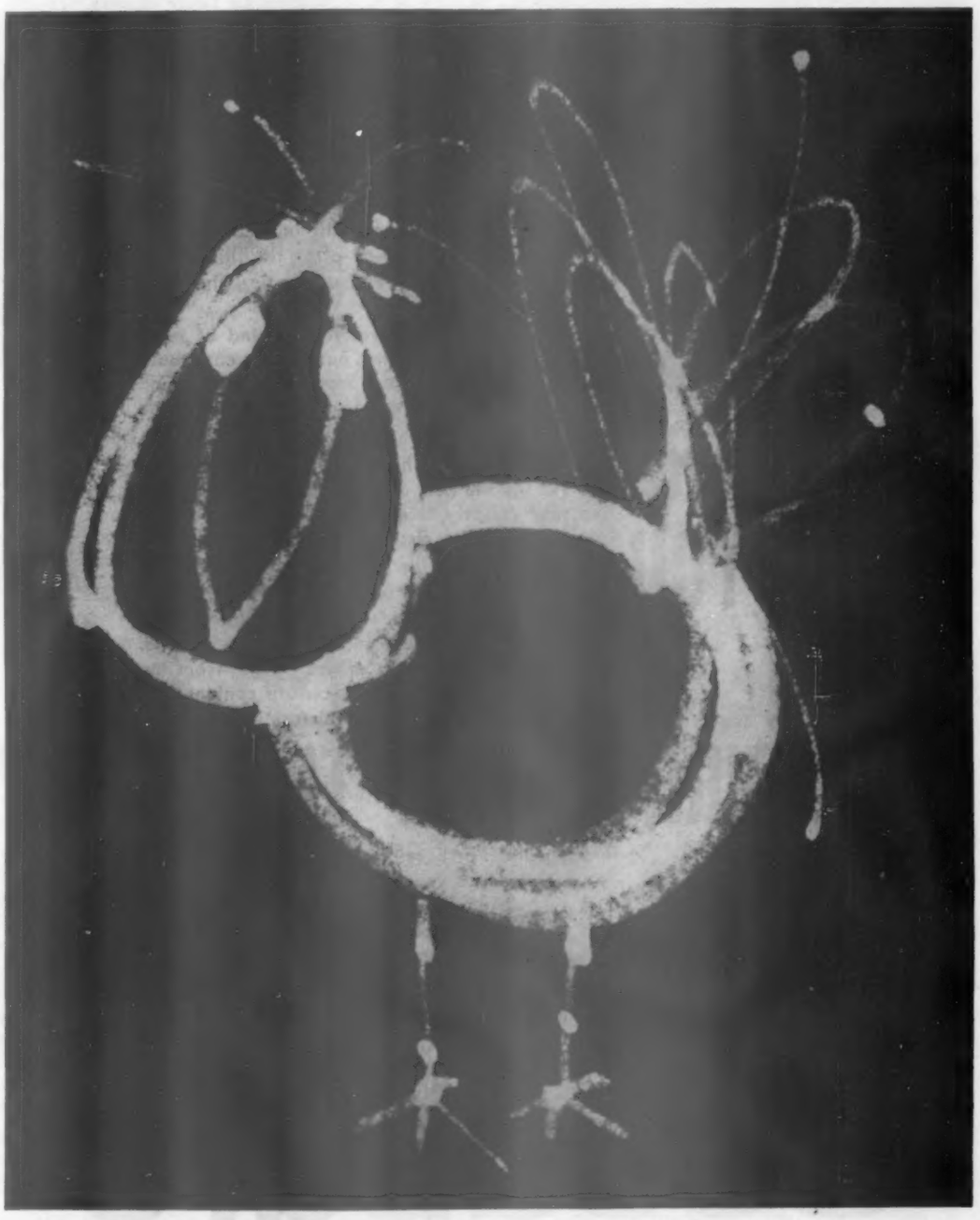

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Service for Testing Forage Established

EXETER, N.H.—The University of New Hampshire in Durham, working through Edward F. Upham, Rockingham County agricultural agent, has set up a new service which will handle forage samples of hay and silage for determination of crude protein, crude fiber and moisture in this area, it has been announced.

The UNH dairy science department will be able to calculate estimated total digestible nutrients (TDN) and net energy and the reports will be sent to selected county agricultural agents, who have been especially trained to interpret the results. Feeding schedules will be established for dairymen who have samples analyzed.

The Rockingham County agent has been equipped with forage sampling equipment and the mailing tubes required for forage sampling.

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Wife to Husband: "I scratched the front fender a little, dear. If you want to look at it, it's in the back seat."

◆ ◆ ◆

An American in Wales noticed the words, "Tam Htab" on a mat in his room. "Ah!" he said to the bellboy, "I suppose that's Welsh for Welcome." "No, sir," grinned the boy, "that's the bath mat upside down."

◆ ◆ ◆

Joe: "Is it really true that it's bad luck to have a black cat following you?"

Moe: "That depends on whether you're a man or a mouse."

◆ ◆ ◆

Boy: "Gimme forty-eight hamburgers."

Waiter: "Forty-eight!"

Boy: "Oh, don't blow a fuse. I'm not going to eat all of 'em. I've got three buddies outside."

◆ ◆ ◆

"Where's my car?" asked the professor's wife.

"Dear me," said the husband. "Did I take the car out?"

"You certainly did. You drove it to town."

"How odd! I remember now that after I got out I turned around to thank the gentleman who gave me the lift and wondered where he'd gone."

OREGON MILL

(Continued from page 27)

ammeters to show the flow of materials through the plant.

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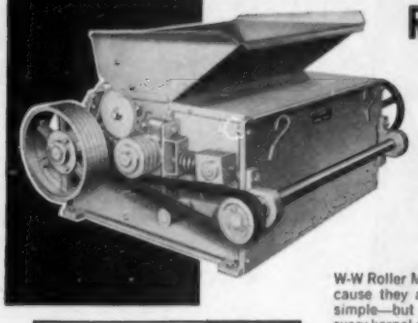

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Waste Fats in Finishing Rations for Drylot Hogs

By Dr. D. M. Baird and H. C. McCampbell
University of Georgia

In recent years, there has been a tremendous increase in the supply of inedible fats in this country. This increase has been due largely to the sharp decline in the use of soap caused by the great increase in the use of synthetic detergents.

Since 1947, there has been over a 60% decline in soap production, while the use of synthetic detergents has risen from 3 to 18 lb. per capita.

Since inedible tallow and grease account for one half to two thirds of the fats and oils used in soap production, the decline in soap production has been a serious handicap in the utilization of these livestock by-products.

There also has been a decline in the use of animal fats for baking and cooking. This decreased use of animal fats has been brought about by improved vegetable shortenings along with an aggressive advertising campaign by the vegetable shortening manufacturers.

The large surpluses of animal fats have depressed the price of fats and have made the livestock industry "fat" conscious. This consciousness, coupled with certain consumer rejection of fatter cuts, has stimulated the emphasis in the production of "meat" animals with less fat at slaughter.

The outlook for higher prices for waste fats is not bright due to declining domestic consumption, rather steady export demand, and the sharp competition of other animal and vegetable oil products. There is a need for additional research with surplus animal fats in order to find more uses for these important by-products of the livestock industry.

Fats in Rations

The feeding of animal fats as a portion of the livestock ration is one of the uses that is finding wide acceptance. Fat has been a known essential in the animal diet for many years.

Fat not only serves as a concentrated source of energy but furnishes essential fatty acids and makes more available to the body the fat-soluble vitamins contained in the feed. Added fats also produce brighter feeds with less dust, increase the ease of pelleting with less machinery wear, and make for greater comfort and health of the workers with less labor loss due to illness.

The feeding of animal fats in swine rations has consistently given small increases in average daily gains, considerable increases in feed efficiency with little effect on carcass quality.

Robison (1943) fed rations containing 2.6, 5.6 and 8.7% fat and found that there was an increase in daily gains, improved feed efficiency and lower feed intake at the higher levels of fat. Perry et al (1953) fed lard at levels of 1 to 10% of the ration with little effect on average daily gains but a considerable improvement in feed efficiency, especially above the 4% level.

Day et al. (1954) found that 10% added inedible fat increased gains by 14% and reduced the feed requirement per cwt. gain by 18%. Carcass grade was reduced slightly with a small increase in depth of back fat.

Kropf et al (1954) found that ground raw waste beef fat had a replacement value of 115% that of corn when fed at 10 to 15% of the ration. Barrick et al. (1953), Anderson et al. (1957) and Blumer et al. (1957) showed that feeding certain fats or oils had a hardening or softening effect on the carcass depending upon the fat used or the degree of unsaturation.

Lard was shown to soften the carcass while coconut oils hardened the carcasses. Heitman (1956) showed tallow additions to increase the weight gains of hogs at the 5 and 10% levels, while feeding 10% lard was without significant effect on weight gains.

Lecithin, a fat-like substance containing nitrogen and phosphorus as well as traces of vitamin E and biotin, has been shown to protect fat and fat-soluble vitamins against oxidation both in feedstuffs and during digestion (Schraf, 1947). Lecithin also apparently improves the absorption of fats and protects animals against undesirable reactions to high fat intakes such as diarrhea (Augur, 1947).

Figuring Economy

Fats are generally considered too expensive to replace grains. In recent years, however, the price spread has narrowed considerably. Also, commercial hog feeds contain enough fat, according to present feeding standards, to produce pork carcasses with more fat than is considered desirable. Therefore, if fat feeding is to be profitable, the increase in gain and feed efficiency must be great enough to offset the higher cost of the fat and the possibly lower carcass value of the hog.

Three tests were undertaken to determine the value of replacing grain with inedible fats as reflected in its effect on average daily gain, feed efficiency, and carcass characteristics. Supplements of chlortetracycline, lecithin, and a fermentation product were also considered as well as intervals of fat feeding during the finishing period.

Test 1: Tallow vs. Grease in the Finishing Rations for Drylot Hogs — Three lots of pigs were used in this initial test to compare a standard corn-soybean meal ration with similar rations containing tallow or grease. Weanling purebred Poland China pigs were allotted on a basis of sex, weight and litter. They were housed on concrete and allowed free-choice access to feed, minerals and water.

Lots were weighed each two weeks with individual animals being removed for slaughter at or near 200 lb. weight. The animals were slaughtered in a local packing house, and dressing percentage was obtained on the warm carcasses with heads on.

Three standard fat measurements were taken 24 hours after slaughter and averaged, and manual hardness was estimated for each carcass by a plant employee. Samples of back fat from the mid-back and of leaf fat were taken at this time for refractive index readings. Refractive index readings were made on a Zeiss-Butyro refractometer at 40°C.

Fat samples were cut into small pieces and the lard rendered over a water bath, filtered, and stored in a refrigerator until refractive index readings were made.

The tallow used in this test graded Prime Tallow with titre of 40-42°C, FFA 6%, MIU < 1% and was stabilized against peroxide rancidity with Tenox-R. The grease graded choice white grease with a titre of 37°C,

EDITOR'S NOTE: *The authors, Dr. D. M. Baird and H. C. McCampbell, are members of the animal husbandry staff of the University of Georgia Agricultural Experiment Station at Experiment, Ga. Their research on waste fats in finishing rations for drylot hogs was published recently in a booklet, Series N.S. 97.*

TABLE 1. Drylot Rations Fed from 125 lb. to Market Weight. Test 1

Lots Treatment	1 Control	2 Tallow	3 Grease
	lb.	lb.	lb.
Ground yellow corn	79.0	72.6	72.6
Ground grain sorghum	5.0	5.0	5.0
Solvent soybean meal	6.0	7.4	7.4
Meat and bone scraps	5.0	5.0	5.0
Alfalfa leaf meal	4.0	4.0	4.0
Trace mineral*	1.0	1.0	1.0
Tallow	...	5.0	...
Grease	...	...	5.0
Antibiotic — B_{12} Supplement†	0.5	0.5	0.5
Vitamin A & D Mix‡	+	+	+
Vitamin B Supplement¶	0.1	0.1	0.1
	100.6	100.6	100.6
Crude protein, %	14.94	14.63	14.38
Gross energy, cals. per gram	4.38	4.67	4.67

*Trace mineral mixture: 225 lb. salt, 400 lb. steamed bone meal, 350 lb. oyster shell flour, 9 lb. magnesium carbonate, 5 lb. ferrous sulphate, 1,500 gm. copper sulphate, 2,250 gm. manganous sulphate, 400 gm. cobaltous chloride, 2,000 gm. zinc carbonate and 200 gm. potassium iodide.

†Calculated to supply 9 mg. chlortetracycline and 9 mcg. vitamin B_{12} per lb. of feed (Lederle's Aurofac 1A).

‡Calculated to supply 428 I.U. vitamin A and 100 I.U. vitamin D_3 per lb. of feed (Dawe's Fixtay-Dee).

¶Calculated to supply 2 mg. riboflavin, 4 gm. pantothenic acid, 9 mg. niacin, 10 mg. chlorine and 60 mcg. folic acid per lb. of feed (Lederle's Fortafeed 2-49c).

FFA < 4%, MIU < 1% and was also stabilized with Tenox-R.

The crude protein levels of the rations were approximately 19% from start of the test until each lot averaged 75 lb., then 16% to 125 lb., then 13% from 125 lb. to market weight. Feed analysis was by proximate analysis, and energy determination was by bomb calorimeter. Table 1 gives the rations fed from 125 lb. to market weight. Tallow or grease replaced corn on a pound-for-pound basis with protein level being held constant by adjustments in the percentage of grain and soybean meal used.

The results of this test are shown in Table 2. The average daily gains were 1.55, 1.67 and 1.85 lb. for the control, tallow, and grease fed lots, respectively. The grease fed lot gained significantly faster (P<.01) than the control lot. There were no significant differences in gains between the control and tallow fed lots or the tallow and grease fed lots.

The ration containing grease appeared more palatable than the tallow ration as indicated by the average daily feed consumption. Since the gross energy content of the tallow and grease supplemented rations were found to be identical, this difference in feed intake would in all probability be due to palatability.

Adding tallow and grease to rations made for greater feed efficiency, with the tallow and grease fed pigs requiring 13.2 and 11.4% less feed per hundredweight gain than the control animals. This increased efficiency was enough to offset the higher price of the fats, which replaced an equal weight of lower priced corn.

There were no significant differences between treatments for the carcass observations made. Dressing percent showed little variation. While not significant, there was a tendency for the fat fed hogs to have a little greater depth of back fat, and they graded softer on the average than did the control lot. Refractive index readings for the control and tallow lots were identical with only a slightly higher reading, indicating a softer fat, for the grease fed lot.

From this test it would appear that tallow would be the fat of choice when compared with grease for swine rations. The tallow was lower in cost, gave lower cost gains with greater feed efficiency, produced a harder carcass, and gave gains that were not significantly different from the grease-fed lot.

Test 2: Tallow, Lecithin, and Antibiotic Feeding of Finishing Hogs in Drylot—This test was conducted to determine the value of certain supplements with and without tallow for finishing hogs in the drylot. Barley was the main grain used in these tests due to the large supply on hand and because barley is believed to be a producer of hard and meaty pork carcasses.

Six-week-old pigs were allotted to six lots on a basis of weight, sex and litter. The pigs were housed on concrete and allowed free choice access to feed, minerals and water. The procedure in the test was the same as that in the first except that these pigs were removed from the test at approximately 190 lb.

A new fermentation product was available that had shown antibiotic and B_{12} activity when fed to chickens and poults in initial tests by the manufacturers. The product was described as "produced by the USDA organism NRRL B-1354 and was assayed and found to contain 3.6 to 3.9 mg. vitamin B_{12} per pound. The antibiotic activity appeared to be about 0.05% expressed as streptothricin." This product was to be compared with chlortetracycline.

Rations containing tallow were fed with and without lecithin additions to observe the possible benefits of lecithin supplementation to high fat rations. The lecithin was used to replace

TABLE 2. The Results of Feeding Tallow and Grease in Drylot Rations for Finishing Hogs. Test 1

Lots Treatment	1 Control	2 Tallow	3 Grease
Number animals	9	9	9
Average weight on test, lb.	39.1	39.0	40.3
Average weight off test, lb.	201.4	201.8	201.7
A.D.G., lb.*	1.55	1.67	1.85
Average daily feed consumed, lb..	5.45	5.10	5.78
Feed per cwt. gain, lb.	352.1	305.5	311.8
Feed cost per cwt. gain, dollars†	10.77	10.26	10.79
Average dressing per cent	79.70	78.96	79.00
Average back fat, inches	1.42	1.48	1.53
Average hardness grade‡	4.50	3.80	3.17
Average Refractive Index at 40° C.			
Back fat	1.4595	1.4595	1.4597
Leaf fat	1.4583	1.4583	1.4584

*Lot 3 significantly higher (P<.01) than Lot 1.

†Feed cost: Corn, $1.69 bu.; sorghum, $2.30 cwt.; soybean meal, $73.50 ton; meat scraps, $75 ton; tallow, $8.75 cwt., and grease, $10.50 cwt.

‡Manual hardness grade: 5 hard, 4 medium-hard, 3 medium-soft, 2 soft, 1 oily.

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TABLE 3. Drylot Rations Fed from 125 lb. to Market Weight. Test 2

Lots	1	2	3	4	5	6
Treatment	Control	Fermen. product	Antibiotic	Tallow	Tallow lecithin	Tallow lecithin antibiotic
	lb.	lb.	lb.	lb.	lb.	lb.
Ground barley	78.7	78.7	78.7	71.9	71.9	71.9
Ground wheat	10.0	10.0	10.0	10.0	10.0	10.0
Soybean oil meal	6.3	6.3	6.3	8.1	8.1	8.1
Alfalfa leaf meal	4.0	4.0	4.0	4.0	4.0	4.0
Trace mineral*	1.0	1.0	1.0	1.0	1.0	1.0
Fermentation product†	...	0.5	...	...	...	...
Antibiotic—B_{12} Supp.‡	...	...	0.5	...	...	0.5
Stabilized tallow	...	...	...	5.0	4.5	4.5
Lecithin¶	...	...	...	...	0.5	0.5
Vitamin A & D mix*	+	+	+	+	+	+
Vitamin B mix*	0.1	0.1	0.1	0.1	0.1	0.1
Total	100.1	100.6	100.6	100.1	100.1	100.6

*See Table 1 for mixtures used.

†Supplied through courtesy Dawe's Laboratories, Chicago, Ill.

‡Calculated to supply 9 mg. chlortetracycline and 9 mcg. vitamin B_{12} per pound of feed (Lederle's Aurofac 1A).

¶Lecithin supplied through courtesy of American Lecithin Co., Woodside, N.Y.

TABLE 4. Results of Feeding a Fermentation Product, Antibiotic, Lecithin and Tallow to Drylot Hogs. Test 2

Lots	1	2	3	4	5	6
Treatment	Control	Fermen. product	Antibiotic	Tallow	Tallow lecithin	Tallow lecithin antibiotic
Number animals	9	9	7	9	9	7
Average wt. on test, lb.	34.7	33.7	34.6	33.9	33.1	34.8
Average wt. off test, lb.	181.3	197.5	193.7	193.7	186.8	200.1
A. D. G., lb.*	1.35	1.59	1.59	1.42	1.37	1.88
Average daily feed consumed, lb.	6.26	6.08	6.22	4.45	4.60	5.44
Feed per cwt. gain, lb.	462.4	381.9	391.1	312.5	336.1	289.5
Per cent feed saved over control	...	17.4	15.4	32.4	27.3	37.4
Feed cost per cwt. gain, dollars†	12.81	10.58	10.91	9.62	10.49	9.06
Average dressing, %	78.3	78.5	78.3	78.2	78.3	77.4
Average back fat, inches	1.36	1.44	1.48	1.52	1.28	1.42
Average hardness grade	4.2	4.6	4.6	4.6	4.8	4.8
Average Refractive Index at 40° C.						
Back fat	1.4609	1.4608	1.4608	1.4606	1.4603	1.4604
Leaf fat	1.4614	1.4616	1.4616	1.4617	1.4616	1.4603

*Lot 6 significantly higher ($P<.01$) than all other lots.

†Barley $1.11 bu., wheat $2.35 bu., alfalfa meal $4.20 cwt., soybean meal $85 ton, tallow $7.50 cwt., and lecithin $15 cwt.

10% of the tallow or 0.5% of the total ration.

Table 3 gives the rations fed from 125 lb. to market weight. The crude protein levels were approximately 20% to 75 lb., 17% from 75 to 125 lb., and 14% from 125 lb. to market. The gross energy, as determined by bomb calorimeter, of rations 1-3 without added fat averaged 4.43 calories per gram, while rations 4-6 which included fat averaged 4.72 calories per gram. Proximate analysis showed the crude fiber to average 8.3% for the average of all rations. This fiber level was higher than expected, considering the high quality of the barley grain being fed.

Table 4 shows the results with the six lots fed in this test. The control lot gained 1.35 lb. daily, while lots 2 and 3 which received the fermentation product and chlortetracycline, respectively, both gained at the same rate of 1.59 lb. daily.

This was just short of significance ($P<.05$) over the control lot. Lot 4, which received tallow in the ration, gained 1.42 lb. daily, and the addition of lecithin did not improve gains since Lot 5 gained 1.37 lb. daily.

Lot 6 gained 1.88 lb. daily, which was a highly significant difference when compared to the control lot. The combination of chlortetracycline, tallow, and lecithin appeared to have a synergistic effect on animal gains as this lot was superior to any other treatment.

Increased Efficiency

While the feeding of added fats stimulated gains only slightly, the efficiency of feed utilization was increased greatly in those lots receiving the added fat. The control lot required 462.4 lb. of feed per hundredweight of gain compared with a low of 289.5 lb. for Lot 6 or a feed savings of 37.4%. The fermentation product and chlortetracycline produced savings of 17.4 and 15.4%, and the fat alone in Lot 4 gave a feed saving of 32.4% over the control lot.

There was some wastage of feed in all lots due to the pigs' refusal to eat some of the barley hulls. This wastage of feed in the control lot was especially large and accounted for the

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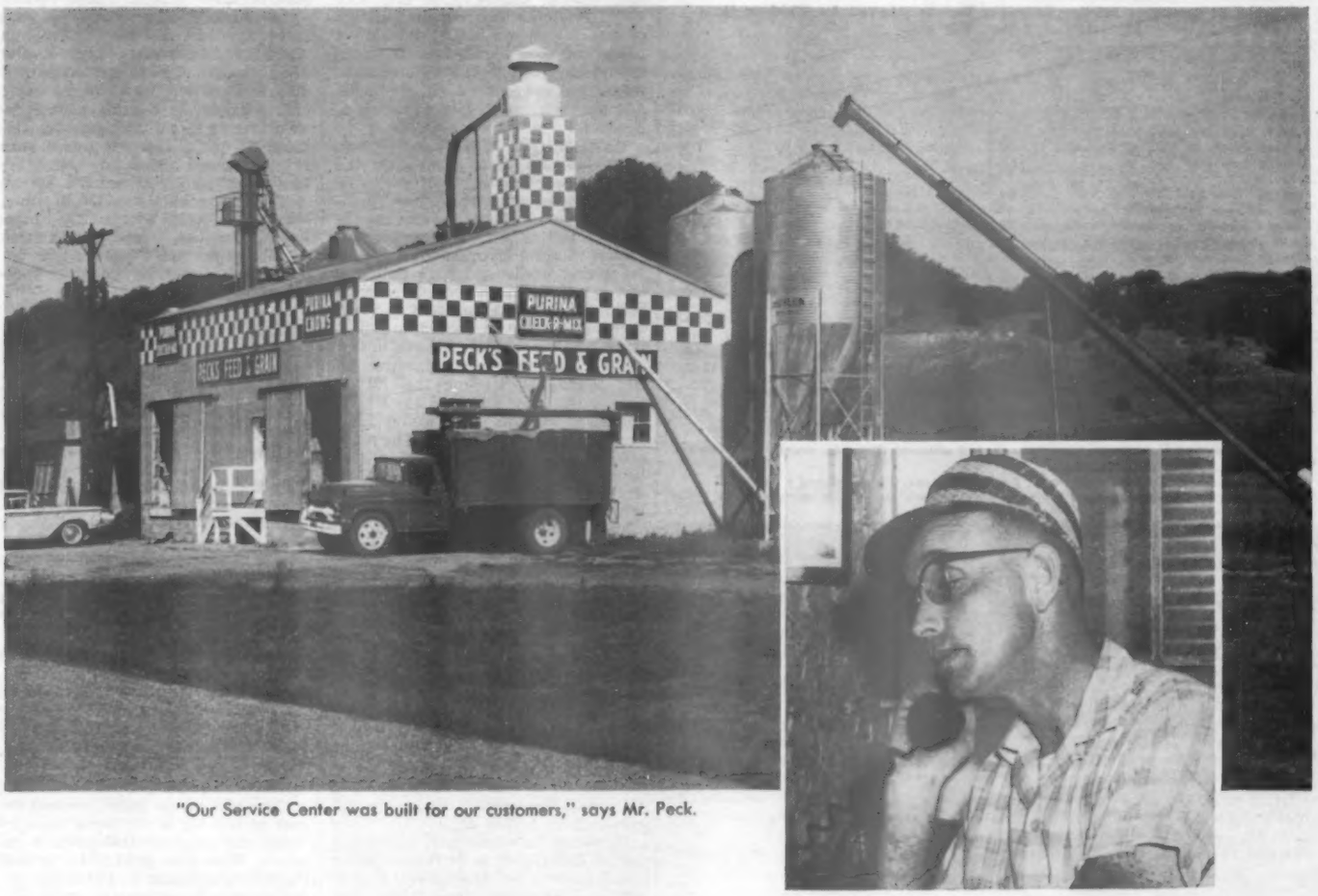

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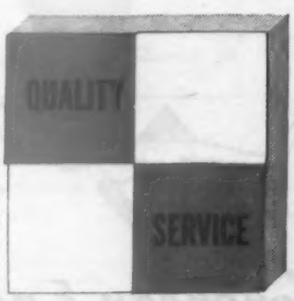

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TABLE 5. Results of Feeding Tallow at Various Intervals for Finishing Hogs in Drylot. Test 3

Lots Treatment	1 Basal no fat	2 8% fat to 130 lb.	3 8% fat 130-205 lb.	4 8% fat start-205
Number pigs	8	8	8	8
Average weight on test, lb.	47.1	47.5	46.9	46.6
Average weight off test, lb.	204.5	203.5	201.9	203.9
A. D. G., lb.	1.58	1.62	1.67	1.73
Feed per cwt. gain, lb.	354.4	324.4	326.3	308.4
Feed per head per day, lb.	5.59	5.26	5.45	5.33
Average dressing per cent*	79.5	80.2	78.9	80.2
Cooler shrink, %†	2.61	2.92	3.05	3.39
Average back fat, inches	1.85	1.74	1.72	1.83
Carcass length, inches	27.9	28.2	28.1	27.4
Hardness grade§	4.34	3.25	3.75	4.25
Feathering¶	4.0	4.0	3.7	4.2
Loin eye, sq. in.	4.56	3.83	3.71	3.86
Marbling¶	2.8	3.4	3.4	4.0
Lean color§	4.5	3.8	4.1	4.7
Cost per cwt. gain, dollars**	9.03	9.70	9.78	10.12

*Hot weight, head on.
†24 hour cooler shrink.
§5 hard, 4 medium-hard, 3 medium-soft, and 2 soft.
¶Fat feathering and marbling: 5 very abundant, 4 abundant, 3 slightly abundant, 2 moderate, and 1 slight.
§Color: 5 grey-bright pink, 4 grey-pink, 3 grey-bright red, 2 grey-red and 1 dark red.
**Corn $1.30 bu., soybean meal $68 ton, meat and bone scraps $100 ton, and prime tallow $9 cwt.

poor feed efficiency to a certain extent.

Although the stabilized fat cost $7.50 cwt. and replaced barley costing $2.31 cwt., based on prices at the time of the test, it can be seen from Table 4 that the feed saving was great enough with the added fat to produce gains at a lower cost than the non-fat ration.

Increased ration palatability has frequently been listed (Armstrong, 1954; Rice, 1954) as an advantage of higher fat levels in rations, but in this test the addition of fat caused a marked reduction in daily feed consumption. The higher energy content of the rations containing added fat, which more quickly meets the animal's daily energy needs, plus less feed wastage in the fat lots would account for a large part in the difference in daily feed consumption.

Dressing percentage was not affected by treatments; neither were differences in back fat thicknesses consistent between treatments. Manual grading and refractive index readings showed the fat-fed lots to have an insignificantly harder carcass fat when compared with the non-fat fed lots.

The three fat-fed lots, on the average, showed harder back fat, with little difference existing in hardness of leaf fat except in Lot 6 where a harder fat was found. Special notice should be given to the difference to refractive index between the back and leaf fats within lots as shown in Table 4.

Generally, it has been shown (Hankins and Ellis, 1926) that the leaf fats are harder than the back fats as determined by refractive index measurement. However, in the animals in this test, there was a consistent reversal of this with the back fat giving harder readings than the leaf fat. The reason for this reversal is not immediately apparent and further observation is needed to determine possible causes.

Compared with the refractive index standards set for the fat of hogs by Hankins and Ellis (1926), all carcasses in this test would have graded soft or medium soft. The probable reason for the manual grades being harder than the refractive index readings showed could be the low temperature of the cooling room in which the carcasses were kept. The average temperature of the cooling room was approximately 32-33° F, thus producing an outside fat that was firm when the manual gradings were made.

It is assumed that the slightly harder fat found in these animals receiving fat must have been due to the kind of fat which was fed. The prime beef tallow used in this test was a harder fat than that (grease) the pig normally deposits; thus, a harder carcass fat was produced in the fat-fed lots due to the apparent failure of the body to change the fat composition before deposit.

It should be noted that there were larger differences in refractive index readings between Tests 1 and 2 than within treatments for either test. This could be due to ration, season, animal variation, or other factors.

Since the fermentation product used in this test produced faster and more economical gains than the control ration, it appears that the product contained antibiotic activity as well as possible unidentified fermentation factors.

Test 3: Tallow Feeding at Various Weight Intervals for Finishing Hogs in Drylot—Since hogs tend to deposit fat in the carcass relatively unchanged from the ration fat when fed at energy levels above body maintenance requirements, certain of the softer or more unsaturated fats will produce soft carcasses. It has been found that feeds which will produce soft carcasses may be fed until the hogs weigh approximately 100 lb. provided hard carcass producing feeds are fed from then until a market weight is reached (Ellis and Isbell, 1926; Hostetler and Halverson, 1940). Barrick et al (1953) showed that diets containing coconut oil would produce hard carcasses, and Blumer et al (1957) showed that the feeding of coconut oil during the last 30 days of the fattening period produced carcasses that were satisfactory in firmness.

In this test, purebred Poland Chinas were allotted to four drylot groups at about eight weeks of age and fed in drylot until a market weight of 205 lb. was reached. All feed was offered free choice in self feeders with downward adjustments in crude protein level being made when the animals in each lot averaged 75 and 125 lb.

The protein levels were 17, 15 and 13%. Animals were weighed each two weeks until near market weight, when they were weighed weekly until 205 lb., animals being individually removed and hauled to a local packing house for slaughter. Detailed carcass observations were made, and some of the more important observations will be reported.

The ration was composed of corn supplemented with soybean meal and meat scraps with the soybean meal and meat scraps being fed in a ratio of two parts of soybean meal to one part of meat scraps. These rations were further supplemented with trace minerals, B-vitamins, vitamin A & D, and antibiotic similar to previous rations. Tallow replaced corn at a level of 8%, with protein being held constant in the fat rations by adjustments in the corn-protein supplement. Lot 1 received the control ration without added fat from start to finish. Lot 2 received 8% fat up to an average weight of 130 lb.; then the control ration was fed until market weight. Lot 3 received fat from 130 lb. to market weight, while Lot 4 received 8% fat for the entire feeding period.

Average Daily Gains

The results of this test are given in Table 5. There were no significant differences in average daily gain although the fat supplemented lots had a slightly higher daily gain on the average. Barrows were found to gain significantly faster ($P<.01$) than the gilts.

Feed consumption per day averaged a little less when fat was in the rations, and improved feed efficiency resulted from the addition of fat. The feed savings compared with the Lot 1 controls were 8.46% for Lot 2, 7.92% for Lot 3, and 12.98% for Lot 4 which received the fat during the entire test.

Although few differences existed in the cost of producing the gain, the increase in tallow prices to $9 cwt. was enough to offset the more economical gains by fat additions as found in the previous test.

The "rule of thumb" for supplemental fat feeding is that fats can replace part of the grain provided the cost of the fat is not more than 2.5 times the price of the grain it replaces. With corn at $1.30 bu. or 2.3¢ lb., it becomes hard to justify $9 cwt. fat strictly on an energy basis. Because fats in the ration have certain other advantages as mentioned earlier, energy alone is not all that can

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be considered when the decision is being made to add or not add waste fats to swine rations.

Treatments had no significant effect on the observed carcass characteristics. However, there was a highly significant treatment X sex interaction with respect to dressing percent, back fat, hardness grade, and marbling. The gilts tended to be meatier with less back fat, had harder carcasses, less internal carcass fat, and a tendency to have longer carcasses with a larger loin eye area.

From the test, it would appear that when the price of tallow is sufficiently low, it can be included in the ration for the entire feeding period. This is possible because tallow tends to produce hard carcasses although there may be some increase in the fat content of the carcass.

Summary of Results

These tests were conducted with waste fats replacing an equal weight of the grain with the protein level being adjusted to compensate for the protein loss due to the removal of grain from the ration. From these tests, the following summary appears justified:

1. Added fat will generally improve average daily gains although this improvement may not be sufficiently large to be significant for the number of animals fed in these tests.

2. Fat additions tend to depress average daily feed consumption. This probably is due to the increased energy content of the rations which meet the animal's energy needs more rapidly than the non-fat supplemented rations.

3. Tallow would appear to be preferable to grease in swine rations due to the apparent greater carcass hardening effect of the tallow.

4. When tallow is added to finishing rations of hogs in drylot, it appears that there is no advantage in removing the tallow during the last part of the finishing period.

5. In this test, lecithin apparently did not improve the utilization of fat.

6. Fat additions made a brighter, dust-free feed with a pleasing appearance. Fat added to rations high in fiber appeared to make the high fiber rations more acceptable from the standpoint of reducing wastage. The animals seemed less selective in their ration when fat was added to the high fiber rations.

7. Small additions of waste fats to our commercial rations would help alleviate to some extent the large surpluses of inedible fats which are a by-product of the livestock industry.

v v

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Illinois Poultry Group To Focus on 'Quickie'

KANSAS CITY—Directors of the Illinois Poultry Improvement Assn. voted to forego the state's district hatchery meetings this fall and concentrate their attention on the midwestern "Quickie" convention to be held Dec. 7-8 in Chicago at the Conrad Hilton Hotel.

The Quickie is sponsored by the American Poultry & Hatchery Federation.

Arrangements have been made by the Illinois Poultry Improvement Assn. for a "hatcherymen's special car" to be attached to the Panama Limited for the run Dec. 7 from southern Illinois to Chicago.

The car will be attached at Carbondale and the train will stop at Centralia, Effingham, Mattoon, Champaign and Kankakee to pick up hatcherymen.

Tickets can be purchased aboard the train, but the secretary of the Illinois Poultry Improvement Assn. wants to be notified in advance concerning reservations. Those interested may write direct to A. E. Harless, Box 91, Shelbyville, Ill.

The train will leave Carbondale on Dec. 7 and make the return trip Dec. 8.

GRAIN MOVEMENT STUDY COMPLETED

★

WASHINGTON—A statistical study on the transportation of grain by railroad, motor truck and water has been issued by the U.S. Department of Agriculture.

Marketing researchers in the USDA's Agricultural Marketing Service compiled these statistics to determine what changes have been made in the movement of grain and to measure the effects of the transition from rail to truck or water upon carriers, markets, producers, elevators and mills.

A free copy of the bulletin, No. 268, "Grain Transportation Statistics for the North Central Region," can be obtained from the Office of Information, USDA, Washington 25, D.C.

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Progress Reported in Georgia Study Of Broiler Condemnation Losses

ATHENS, GA.—Georgia scientists report that in their study of broiler condemnation losses data show environmental factors are related to the high condemnation rates, but are more important in the presence of disease.

Those making the study are: Dr. S. C. Schmittle, director of the University of Georgia poultry disease research center; W. E. Clarke; John Kimsey, and Dank Morris.

Other conclusions are: Respiratory diseases in general are the most important factors related to broiler condemnations and adverse weather or environmental conditions make them worse; the qualities that lead to good records also produce good poultry and less condemnations; control of respiratory diseases will be necessary to reduce broiler condemnations, and improved environmental conditions are necessary to minimize condemnations resulting from respiratory diseases.

The Georgia researchers plan to issue a supplemental report on the completion of the study.

Flock records for the study showed that the respiratory diseases associated with high condemnations are Newcastle disease, infectious bronchitis and chronic respiratory disease (PPLO), with PPLO being the most constant factor.

One trend the scientists noted as being "clearly evident" was that condemnations were higher where information was unavailable because of poor records. They said, "This indicates that there is a relationship between poultry rearing practices and record keeping, thus the better the records, the better the chickens."

A survey of condemnation rates for 53 growers showed wide variance. A breakdown showed that of the 53 flocks 9 had less than 1% condemnation, 17 ranged from 1 to 3.99%, 15 ranged from 4 to 10% and 12 ran over 10%. In this study, flocks were visited during the growing period and the condemnation rates could not be anticipated. At the time of processing, condemnation rates were learned. For that reason, low, medium and high condemnation rates were included. Had the flocks been selected on the basis of high condemnation at the plant, they could not have been observed during the growing period. The researchers pointed out, "It did not follow that a grower would necessarily have successive high condemnation flocks."

Condemnation Rates

It is stated that there was considerable variation in condemnation rates between dealers and between hatcheries, with one dealer having significantly lower condemnation and one hatchery having significantly high condemnation.

During a second phase of the project, a study was made in a situation where a dealer was having consistently high condemnations. His average from December to April was 8.52% on 1,060,300 birds started. The condemnation rates varied from a low of 0.20% to a high of 31.36%. All the flocks involved during this period were included in the survey in an attempt to determine the relating factors.

The breakdown on 99 growers is as follows: 24 with less than 1% condemnation, 36 with 1 to 3.99%, 42 with 4 to 10% and 34 with more than 10%. Of the 76 combinations of hatching egg sources it was evident that certain breeder flocks, particularly one, were associated with the growers with high condemnations.

Two evident factors, according to the four researchers, were that condemnations were higher in flocks over 7,000 in number and that condemnations were higher in flocks with a mortality rate of over 8%.

The report states that the study was undertaken "because of the alarming increase in condemnations of broilers coincident with development of the compulsory inspection program without specific information as to the contributing factors."

"This survey was designed to consider any and all possible factors that may be related to condemnation from the breeder flocks through the growing-out phase of broiler production. Certain dealers who were contacted furnished lists, locations of growers with repeated high condemnations and other pertinent information," the four men said.

Wooster Feed Names Varga to Position

WOOSTER, OHIO — Francis D. Varga has joined the staff of Wooster Feed Mfg. Co. here, according to announcement by Harold L. Edwards, secretary and general manager of the firm. Mr. Varga will assist Mr. Edwards with nutrition, formulation, purchasing, advertising and sales.

Francis D. Varga

Wooster Feed Mfg. Co. serves eastern Ohio with its line of "Gold Star" feeds and "Candied Copra." In his new position, Mr. Varga will be responsible for testing and evaluating products and programs.

For six years, he was the Ohio representative for the Amburgo Co., Inc. He is a member of the Cincinnati, Columbus and Toledo feed clubs and the Ohio Grain & Feed Dealers Assn. In the latter organization, he is a member of the public relations committee.

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Vaccination, Sanitation Programs Lower Broiler Condemnation Losses

By Special Correspondent

LAUREL, DEL.—A survey, carried out cooperatively by staff members of the University of Maryland and the University of Delaware, showed that broiler growers following the recommended vaccination and sanitation programs had a lower condemnation rate on their birds than did the other growers studied.

This was reported by Dr. Morris S. Cover, chairman of the department of animal and poultry science, University of Delaware, at a Delmarva Regional Poultry Meeting held here.

It was pointed out at the meeting that every time a bird is removed from the processing line at least 60¢ is lost. For the grower producing 20,000 birds, a loss rate of 5% costs him $600 plus a $60-$75 profit he would have made on his house and labor if that floor space had been used by saleable birds.

Dr. Cover, who headed the study, said, "Chronic respiratory disease is the most frequent disease cause for condemnation. Newcastle disease is also an important factor in the condemnation rate. If respiratory diseases, C.R.D., Newcastle, Infectious Laryngotracheitis and Infectious Bronchitis could be controlled, the number of birds condemned would be greatly reduced. A considerable number of birds on the processing line show evidence of intestinal coccidiosis. This has an influence on the rate of growth and feed conversion."

Four university men followed a total of nearly 1 million birds in 61 flocks from the hatchery to the processing line. The team consisted of James Nicholson and Grover C. Harris, both of the University of Maryland; Ray Lloyd and Dr. William Krauss, of the University of Delaware.

About one-fifth of the flocks investigated had less than 1% condemnations. Two-fifths had 2% condemnations or less. But it was disappointing to find that one-third of the flocks had more than four per cent of birds turned down by inspectors, the men said. Ten per cent losses were suffered by 13% of the flock owners.

Poor Growers

"It is interesting to note that 11 of 60 growers are considered poor growers," Dr. Cover said. "Forty-six of 55 flocks—84%—showed evidence of disease outbreaks. This indicates the kind of disease challenge we have."

The field observation team found 38 different kinds of vaccination programs and procedures.

"I wonder sometimes why we are doing as well as we are," Dr. Cover commented.

The procedure for vaccination that gave the least condemnations was the eye application some time before 10 to 12 days plus a second vaccination. Only 2.39% of the birds treated in this manner were condemned. Giving the poorest disease control, apparently, was the water vaccination method. An average of 9.23% of the birds were turned down at the processing plant, the survey team found.

"It also appears that the later the disease appears, the better are the chances for low condemnation rate," the poultry pathologist said.

A number of factors perhaps have a direct application to the disease problem. It was found that if there was no reaction to the vaccination that one-half of the flocks had a 4% condemnation rate or less. The lowest condemnation rate occurred when there was a slight reaction to the vaccination. A total of 27 flocks under observation had a slight reaction. Twenty-one of these had less than 4% condemnations.

No Wormer

If no wormer was used, 20 of 34 flocks—or 59%—had a condemnation of less than 4%. But if a wormer was used, as was the case in 26 flocks, 21 of the flocks or 81% had fewer than 4% condemned birds.

The survey team found that if the litter was removed between the flocks, 63% of the flocks had less than 4% condemned birds. And if the house was washed, or washed and disinfected, 86% of the flocks had less than 4% condemnations.

Numerous management practices were investigated. Some gave significant indications that they are responsible for condemnations; others did not.

If growers put 400 to 500 birds per stove the average condemnation rate is 4.34%. More birds per stove give higher losses. There was no difference in condemnation rate of flocks using between 0.7 and 0.8 square foot of floor space. Five growers gave the birds 0.9 square foot. Four had 2% or less condemnations and one had more than 4%.

Solid Partitions

In houses containing solid partitions the average condemnations were 3.32%. Wire partitions gave much poorer results, an average of 7.87%.

The type of heat was taken into consideration. In houses using individual oil stoves, six of 14 flocks or 43% had 4% condemnations or less. Individual gas stoves gave 4% or fewer condemnations in 18 of 23 flocks or 78%.

In narrow broiler houses, 72% of the flocks had less than 4% condemnations. The average condemnation rate for all narrow houses was 4.39%. In the wide houses, 53% of the flocks had less than 4% condemnations. The average for all of the wide houses was 6.98%.

The investigation team checked on debeaking. When debeaking was done at one day of age, 66% of the flocks had less than 4% condemnation. When debeaking was done at 10 days to 14 days of age, 74% of the flocks had less than 4% condemnations.

This study was made under the sponsorship of the Delmarva Poultry Industry, Inc. Edward H. Covell Jr., Easton, is chairman of the committee on efficiency-quality production for DPI.

Dr. Cover said that many factors did not have sufficient evidence to draw conclusions. One of the most important discoveries made was how to conduct a survey of this type. Perhaps more surveys will be made in the future. If so, the team will be more experienced. It is now evident what factors can be blamed for condemnations. These factors in future surveys will get more thorough investigation.

William Fischer Dies

NEW YORK — William Franklin Fischer, former sales manager of Magnus, Mabee and Reynard, Inc., here, died recently following a prolonged illness. Funeral services were held in Forest Hills, Long Island.

Mr. Fischer started work with the firm in 1907 and advanced to the position of vice president and sales manager at the time of his retirement several years ago.

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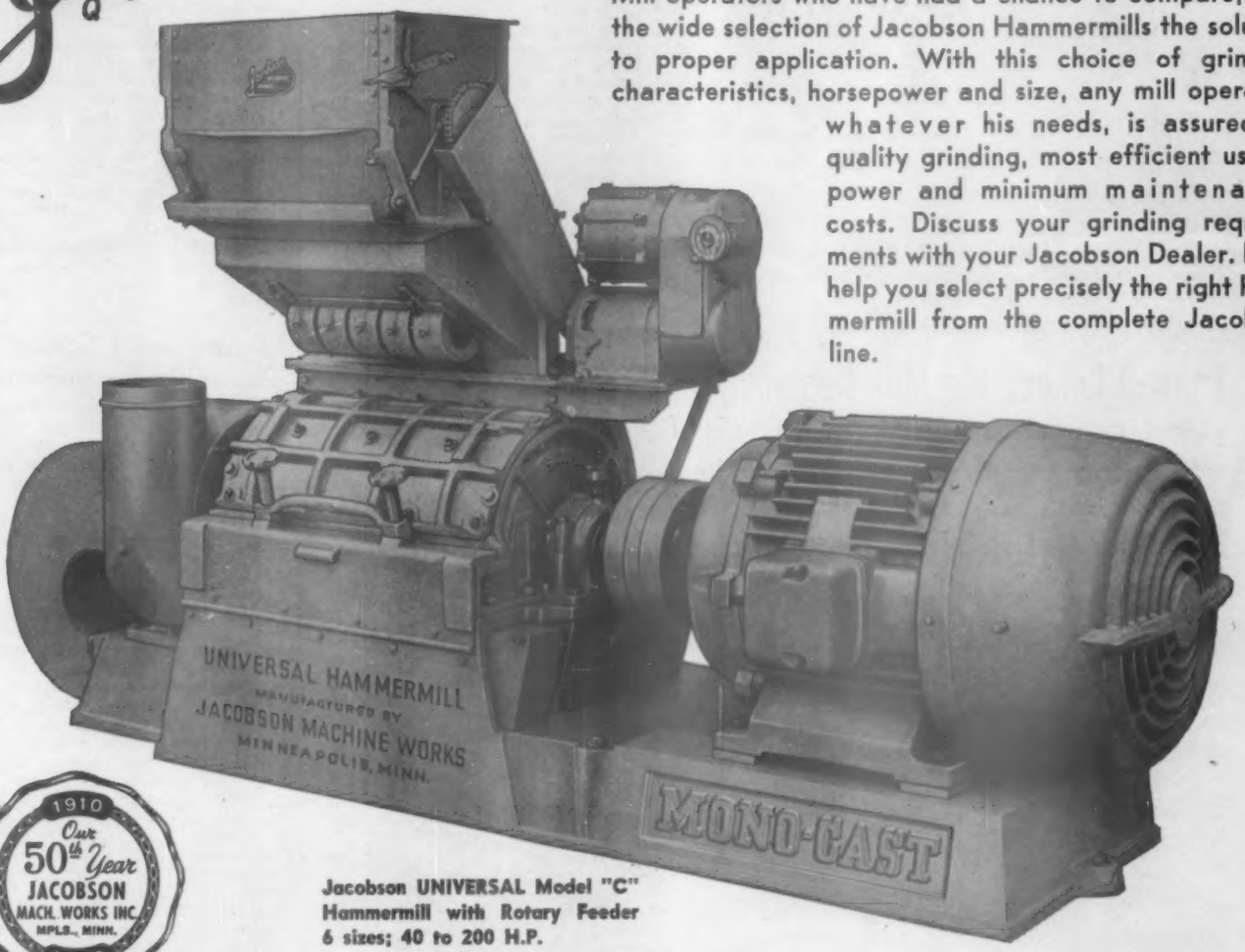

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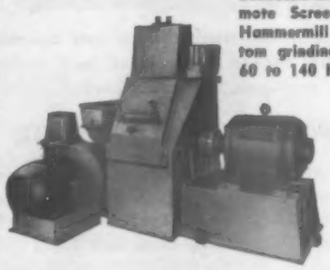

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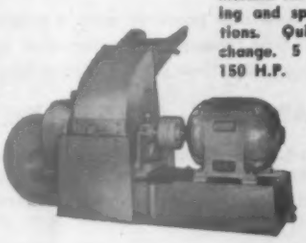

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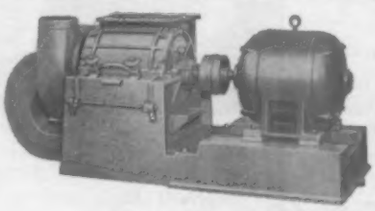

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Swine Conference Program Announced

LEXINGTON, KY.—Details for the 3rd annual National Swine Industry Conference to be held Oct. 27-28 in Lexington have been annnounced by conference chairman Keith E. Meyers of the National Swine Growers Council.

Some of the major addresses to be delivered at the meeting include: "The Swine Industry 10 Years From Now," Dr. W. P. Garrigus, University of Kentucky; "How Big Is the Foreign Market for Pork Products," H. H. Alp, American Farm Bureau Federation; "Swine Diseases Can Be Conquered," Dr. William A. Hagan, National Animal Disease Laboratory, Ames, Iowa; and "The Evolution of the Modern Ham," Ray Parrish, Wilson & Co., Inc.

Allan Kline, past president of the American Farm Bureau Federation, will speak on "Pigs and the Government" at the Thursday luncheon while W. F. O'Dell, president, Market Facts, Inc., will discuss "A New Image for Pork" at the Thursday evening banquet.

Ten workshop groups are scheduled at the meeting. One group will discuss nutrition and feeding of swine. Speakers in this group, and their topics, include Larry Simerl, University of Illinois, "Feed Grain Production and Swine Production"; George Brauer, Oakford, Ill., "Swine Nutrition and Feeding Problems of Producers"; John Lasley, University of Missouri, "Efficiency Goals in Swine Production"; and R. O. Nesheim, The Quaker Oats Co., "Progress in Swine Nutrition."

Other general topics to be discussed in the workshop sessions include "Marketing of Live Hogs," "Reducing Losses from Swine Diseases," "Feeder Pig Production and Sales," "Artificial Insemination of Hogs," "Breeding and Reproduction," "Housing Equipment and Capital Needs," "Uniform Carcass Contest Procedures," "Government Reports on Hogs," and "Is the Public Getting the Pork It Prefers?"

Registration for the conference will open at 8 a.m. Thursday morning. The meeting will adjourn at 11:30 a.m. Friday.

Management School Theme Is Performance

ATHENS, GA. — "On-the-Job-Performance" will be the theme for the third unit of the Southeastern Executive Development in Business Management School to be held here Oct. 16-21.

A feature of the unit is the work each participant does in roughing out plans for improving his own performance and development. Participants will analyze factors that motivate others, integrate all principles and tools of management and apply them to situations in their own companies.

J. M. Tankersley, president of the Southeastern Poultry & Egg Assn., the sponsoring organization, in announcing the agenda, reported that the enrollment had exceeded the capacity for the school for October and that all applications received now would be enrolled for the 1961 series of schools.

Subjects for the program are: "Protecting Profits," "Personal Investments," "Estate Planning," "Business Policy," "Brainstorming Poultry Problems," "Memory," "Interviewing as a Tool of Management," "Salary Administration," "Employee Attitudes and Motivation," "Credit Analysis," "Group Dynamics," "Selling by Telephone," and a full day of "Business Game" with an electronic computer unit to be used by participants.

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FOR SALE—ONE AMERICAN, SIZE 1-13 to 1 ratio, cast case reducer. One American, size 2-13 to 1 ratio, stamped steel reducer. Regal Packer By-Products Co., Lynn Center, Ill.

BAG MANUFACTURING AND PRINTING equipment to be sold at Public Auction, Tuesday, Oct. 18, 1960, 10:30 a.m., at 1620 S. W. Front Avenue, Portland, Ore. Call or write: Portland Development Commission, owner, 2130 S. W. Fifth Avenue, Portland 1, Ore.; CApitol 6-4036.

FOR SALE—ENCLOSED MOTORS; RICHardson scale; truck scales; hammermills; oat crimpers; horizontal and upright feed mixers; sewing machines; elevator legs; screw conveyors; molasses mixers and pellet mills. J. E. Hagan Mill Machinery, Box 574, Jefferson City, Mo.

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Dr. Salsbury's Labs Adds to Research Staff

CHARLES CITY, IOWA—Paul R. Abrahamson, a recent graduate of Jamestown (N.D.) College, has joined the research staff of Dr. Salsbury's Laboratories.

P. R. Abrahamson

He is working under the direction of Dr. K. B. Kerr on the safety evaluation of pharmaceutics.

Mr. Abrahamson majored in biology in his college studies with minors in mathematics and chemistry.

Arkansas Valley Firm Reports First Dividend

DARDANELLE, ARK. — Arkansas Valley Industries, Inc., which made its first public offering of stock Aug. 29, has declared its initial dividend.

Harold Snyder, president of AVI, said a dividend of 12½¢ a share would be paid Oct. 14 to stockholders of record Oct. 5. AVI has 128,437½ shares of stock outstanding.

AVI is an integrated farming operation specializing in the milling of feed and the growing and processing of broiler chickens. The company was incorporated Dec. 1, 1958, and has acquired other companies engaged in various aspects of the broiler industry and farming.

The Aug. 29 offering consisted of 30,000 shares of common stock. In connection with the stock offering, AVI issued $600,000 in 6% convertible subordinated debentures. The stock is traded over the counter.

AVI is the first company of its type to make its stock available to the public.

Mr. Snyder said consolidated sales of AVI during the 21 weeks ending Aug. 27 totaled $8,406,911. Earnings before taxes were $496,812, Mr. Snyder said. Earnings after taxes amounted to $275,865, equal to $2.15 a share.

132 in Feed, Flour Studies at K-State

MANHATTAN, KANSAS — Total enrollment in the feed and milling technology curricula for the fall semester at Kansas State University has been reported at 132 students by Dr. J. A. Shellenberger, head of the department of flour and feed milling industries.

Of these, 80 students are in the feed technology curriculum and 40 are in the milling technology curriculum, for a total of 120 undergraduate students. There are 12 graduate students.

This is approximately the same enrollment as at the begining of the fall term last year. However, Dr. Shellenberger says, "We consider this quite satisfactory, since little effort has been made to encourage enrollment. As soon as we can move from our temporary location into our new building, efforts will be made to increase enrollment."

Wins Scholarship

MINNEAPOLIS — Dale Rodman, Toronto, Kansas, a junior at Kansas State University, Manhattan, Kansas, has been selected as the recipient of the Axel E. Jacobson scholarship in feed technology for the 1960-61 school year, it has been announced.

Selection of Mr. Rodman was made by a faculty committee. The Axel E. Jacobson scholarship is sponsored by Jacobson Machine Works, Inc., Minneapolis, manufacturer of hammermills and allied equipment. The firm, which is celebrating its golden anniversary this year, initiated the scholarship five years ago, in honor of its founder.

Valley Mills Holds Fall Sales Meeting

VICKSBURG, MISS. — Western style hats with printed hatbands reading "Grade A Cattle Feed Rustler" were presented to territory managers at the annual fall sales meeting of Valley Mills Grade A Feeds held here.

The presentation came at the session on Grade A beef cattle feeding programs. W. C. Roberson, sales manager for Valley Mills, told the group "each of you has now been branded a rustler—so you may as well rustle the cattle feed business this year." New beef cattle feeding programs and the cattle feed booking policies were discussed during the session with emphasis on Valley Mills' interest in developing the cattle feed business in Mississippi, Louisiana and Alabama, it was reported.

The two day sales meeting centered around the theme "This is Our Year to Orbit."

Speakers during the business sessions of the sales meeting included V. C. Florian, general manager of Valley Mills, who spoke on "Let's Look Forward"; N. N. Perkins, special Val-E-Pep dog food representative; Martin H. Schroll, credit manager; Hubert Bass, traffic manager; Herbert Tessereau; Dr. Elbert J. Day, nutrition consultant for Valley Mills; W. C. Roberson, sales manager, and Harry R. Gillespie, merchandising manager.

A dinner meeting was held at Vicksburg Hotel and later the group attended the showing of "Gold in the Hills" aboard the Mississippi river showboat, Sprague.

Gossypol Work Report

DALLAS—A National Cottonseed Products Assn., Inc., research program report during a board of directors' meeting here described studies of a "new and promising solvent, a new bleaching agent that is highly effective and isolation and removal of certain fatty acids present in cottonseed oil."

Directors approved a stepped-up seed-breeding program designed to incorporate the gossypol-free character into commercial varieties of cottonseed.

Allied Mills Sees Gains in Volume, Profit

CHICAGO—"The year ahead of us presents a continuation of change and challenge," commented Elmer W. Lenz, chairman of the board and president of Allied Mills, Inc., in his remarks to shareholders at the company's annual meeting. However, he indicated that there was opportunity for growth, and he predicted that the firm would reach a new tonnage high and would show an improved profit basis.

Continued business growth of the firm was pledged by officials in a letter to shareholders in the annual report (Feedstuffs, Sept. 24) and in remarks at the recent annual meeting.

Mr. Lenz noted that earnings for the 1959-60 fiscal year (ended June 30) were down somewhat from the previous year but were considered "quite satisfactory" under existing circumstances. Both volume and profits were felt to be above the industry average.

"We fully expect the 1960-61 fiscal year to be the biggest year from a tonnage standpoint in the company's history," Mr. Lenz said at the annual meeting. "I have again asked our sales department for a 5% increase in the fiscal year ending June 30. This, I feel, can be accomplished."

Then he elaborated on his reasons for confidence.

"First, in many areas, a big changeover from complete feeds to concentrates was made in the last six months of 1959 and the first six months of 1960. We fed many more birds and animals than during the previous fiscal year, but due to feeding concentrates instead of complete feeds, we sold slightly less feed. We feel this transition is largely over, and its effects will not be as noticeable in this fiscal year.

New Broiler Arrangements

"One of the more recent developments is the new interest displayed by several of the major packing companies in integrated or cooperative arrangements in the production of broilers. Your company is experienced in this field and is ideally located in the broiler producing areas to take full advantage of this development. In fact, we already have certain commitments and are negotiating others at this time. Such developments will add stability to the broiler industry and will be a reliable source of new tonnage.

"Furthermore, taken as a whole, feeding operations should be more profitable on the average than during the past twelve months. Hog feeds, which are very important to us, should increase because of increased numbers and somewhat higher hog prices than a year ago. Egg feed sales should respond to improved egg prices and increases from the big cutback in pullets a year ago. Turkey feeds, dairy feeds and cattle feeds have shown splendid increases for us this past year and should continue the upward trend. Coupled with the opportunities for continued increases on our specialty feeds, "Calfnip," dog food and laboratory feeds, we should get at least a 5% increase in this fiscal year.

"I realize that many farmers have depleted their cash reserves, but net farm income is expected to be considerably better the last six months of 1960 than during the same period last year. This should give our sales organization encouragement.

"The progress and growth of the feed industry is linked closely with that of general agriculture and especially that of livestock and poultry production. Unfortunately, during the past year, much has been written which deplores the plight of farmers, and many people have been led to believe that the future of agriculture is in jeopardy. This is not the true situation. We have a rapidly changing but a dynamic and growing agriculture. Inefficient farmers are leaving the land, farm numbers are shrinking, but larger units are growing stronger and will continue to be profitable. Total agricultural output has doubled in the last fifty years—all from less acres with only half the manpower. While net income from actual farming operations declined in 1959, the total gross income of farm families was the second highest in history, only 2% less than record-breaking 1958. Because farm units were larger, the actual gross income per farm family was the highest on record. Total farm assets are the highest on record.

"It is quite evident that, with the tremendous expected increase in population, farmers must produce more and more meat, milk, eggs and other farm products. Farmers will continue to prosper and grow as customers for feeds needed in livestock and poultry production.

Growth Industry

"Being so closely related to animal agriculture, the feed industry may well be considered a growth industry. According to 1958 business census figures, the feed industry rated 13th among all industries in regard to value of products shipped, having stepped up from 16th position in 1954. It is the most important industry in regard to total value of goods and services sold to farmers.

"Feed industry leaders predict that this industry as a whole will continue to grow at a rate of 4-5% per year. Your company has more than kept pace with the industry growth up to date and fully expects to continue its leadership in the future.

"Thus, I hope you will share with me and the management of your company the feeling of confidence and optimism for the continued growth of the feed industry and, in particular, that of your own company."

Sales and Earnings

Turning to the company's annual financial report, Mr. Lenz said, "If you have had the opportunity to analyze this report and read the message therein, you are aware of the fact that, despite some rather rough going, we ended the year with results that we feel are quite satisfactory under existing circumstances. In fact, I am pleased to say that after studying the financial reports and published statements of many of our competitors, I feel that our performance, both on volume and profits, was above the average for the industry.

"Here are several pertinent statistics: Earnings of $2,455,465 were reported for the year compared with $3,011,613 last year. This amounted to $3.02 per share, compared with $3.71 per share last year.

"Sales dollar volume decreased approximately $7 million this year from the $112,817,415 reported last year. This decline is attributable to lower prices obtaining throughout most of the past fiscal year. Feed tonnage volume was down only slightly from the previous year, somewhat less than the decline for the industry as a whole.

More Financing

"I should like to direct your attention to the fact that during the year, fixed assets increased $3,535,316. There was also an increase in accounts receivable of $1,676,798. This points up the trend in the feed business, requiring more financing of feed tonnage sold. We believe, however, that our credit is extended on a sound basis and we feel that our receivables are in very good condition.

"During the current fiscal year we are not anticipating any extensive construction projects. Any additions to 'Plant and Equipment' can well be financed through our provision for depreciation.

"As previously stated, the past year has been a difficult and unfavorable one for all companies engaged in feed manufacturing and soybean processing. Due to low egg, hog and broiler prices, along with lower grain prices that obtained during the last half of 1959 (the first half of our fiscal year), total farm net income decreased. This brought about a difficult sales situation in our industry. Competition in our business is intense. In order to be competitive and also to assist users of our feeds, who were caught in a cost-price squeeze to continue operations, the profit margins on our feeds were held to a minimum.

Soybean Processing

"Because of the low market price for soybean oil, and to some extent for soybean meal, compared with the price paid for soybeans, it was not possible for our soybean processing division to operate at a normal profit during the past year. There is some improvement in soybean oil prices, and it is believed that soybean processing operations will be better during the current year.

"Our new soybean solvent extraction plant now in operation at Guntersville, Ala., will enable us, through its manufacturing efficiencies, to take advantage of any improvement in that area of operation. We are extremely pleased with this new plant, which was placed into operation in May. It is of the very latest design, making use of the most efficient processing equipment available and can process up to 700 tons of soybean meal per day. We have added 1 million bu. of grain storage at Guntersville during this last fiscal year. In our opinion, Guntersville is an ideal location for a soybean processing plant because of its proximity to the expanding poultry and livestock industry in the Southeast and because of the advantages of water transportation.

Improved Profit

"While we are optimistic that profits from the soybean department will be more satisfactory this year, we are also looking to our feed manufacturing operation to function on an improved profit basis. There are two important ways in which we can bring about an improvement in our performance during this current year:

"(1) By increased sales and volume to offset lower margins and increased manufacturing costs. To this end, we fully expect at least a 5% increase in tonnage over last year. Feed sales during July and August are slightly ahead of the same two months a year ago.

"(2) By more efficient performance, continued close control over operating costs and elimination of any unprofitable operations wherever possible. In this respect, we are asking all department heads to analyze carefully every operation coming under their purview.

"During this year we expect our Texas subsidiary to make a contribution through increased tonnage as well as profits. After approximately two years of operation this wholly-owned subsidiary is now making satisfactory progress. In March of this year, this subsidiary took over the feed manufacturing department of the Fant Milling Co., Sherman, Texas. No assets were purchased, but a very favorable arrangement was made for transferring the livestock and poultry feed tonnage to our Ft. Worth plant. This plant was in an excellent position to handle this additional tonnage.

"Our alfalfa processing operations conducted at Cozad, Darr and Elm Creek, Neb., were quite satisfactory last year. On the basis of present prospects, this division of the company should contribute favorably to our over-all income picture this year."

NEW OWNER FOR FIRM

FARMERSBURG, IND.—Ovid A. Larr recently bought the Lash Milling Co. of Farmersburg and is operating it as Larr Elevator & Feed Co.

BUTTERMILK POWDER for sale, animal grade packed in polyethylene lined bags. Truckload or carload quantities f.o.b. Minneapolis, Minn. Also spray and roller dried whey.
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Quality Control Emphasized at Arkansas Formula Feed Meeting

By J. CLAYTON HERMAN
University of Arkansas

FAYETTEVILLE, ARK. — "The feed manufacturer without quality control is seriously handicapped," Dr. Kendall Scott, associate animal husbandman, stated during the Arkansas Formula Feed Conference held Sept. 22-23 here at the University of Arkansas Agricultural Experiment Station.

About 200 feed industry personnel, researchers and agricultural leaders from throughout the U.S. attended the two-day event sponsored by the University of Arkansas division of agriculture and the Arkansas and Midwest feed manufacturers associations.

"Standards are maintained to protect the formula feed manufacturer. First, when he buys the prime ingredients and, later, when he sells a finished product. Standards make it possible to evaluate a prime ingredient in dollar value," Dr. Scott continued.

"Most quality control laboratories currently use proximate analysis as the only measure of quality. This," he warned, "does not indicate protein quality."

"As the meat meals and fish meals become more competitive, it is mandatory that some standards be set to evaluate the quality of protein. Acceptance by industry and feed control officials of any one or a combination of the protein quality tests is necessary to insure progress in formulation of quality feeds," Dr. Scott maintains.

Dr. M. L. Ray, animal husbandman with the Arkansas station, pointed out that in the beef industry a complete mixed ration seems to have its greatest possible usefulness for rapid fattening of animals. W. M. McBride, research assistant, was co-author of this paper.

"A complete mixed ration is desirable in a commercial fattening operation because it lends itself well to mechanization. Also, automatic mechanical feeding equipment is feasible with mixed feeds. Automatic equipment can reduce the amount of labor needed for the feeding operation or it can increase the number of animals one man or one crew can care for.

"More uniform intake of nutrients is another advantage of a complete mixed ration. Well mixed rations do not permit an animal to 'sort out' and leave parts of the ration that do not suit its preference," Dr. Ray explained.

Another factor involved is the concentrate to roughage ratio. Until recently, feed men have accepted a range of a 1:3 to 3:1 ratio of concentrate to roughage as most desirable, depending upon feed ingredients used in formulating the rations. Now, all-grain rations are being fed successfully. The economy of an all-grain ration, he said, depends upon conditions existing within each individual feedlot.

Expense may be a drawback in widespread use of a complete mixed ration, Dr. Ray cautioned. Costs of grinding, mixing and pelleting grains and roughages will likely be sufficiently high so that only large commercial feedlots with mechanized feeding facilities can profitably use a complete mixed ration, he said.

Mineral Requirements

"Recent developments indicate that the optimum level of calcium in an animal's ration has very narrow limits if maximum performance is to be attained," Dr. P. R. Noland, UA animal husbandman reported.

Excesses of calcium have tended to increase the incidence of parakeratosis in swine, reduce the level of broad spectrum antibiotics in the blood serum of broilers, reduce the digestibility of high melting point fats in dairy cattle, and interfere with absorption of certain trace minerals in those animal species, he remarked.

Recent research at the Arkansas Agricultural Experiment Station, he noted, indicates that a level of 0.6% calcium in broiler rations resulted in optimum gains, feed efficiency and percent bone ash. Those results were obtained with either 0.5 or 0.6% total phosphorus in the ration. Performance of broilers fed 0.6% total calcium was superior to those fed either 0.8 or 1.0% calcium, he concluded from the research. In contrast, the National Research Council recommends 1% calcium in rations for starting and growing chicks.

GIFT—Robert Latimer, Lockesburg, Ark., left, president of the University of Arkansas Animal Industry Club, accepts a $400 check from Henry Niemeyer, Little Rock, president, Arkansas Feed Manufacturers Assn. The gift to the club will be used to help pay expenses of the various student judging teams. Presentation was made as a part of the Arkansas Formula Feed Conference.

PARTICIPANTS—Shown here are program participants for the Arkansas Formula Feed Conference held Sept. 22-23 at the University of Arkansas' agricultural experiment station in Fayetteville. From left to right, they are: William Larson, Kansas City, representing the Midwest Feed Manufacturers Assn.; Henry DeSalvo, Little Rock, with the Arkansas State Plant Board; Dr. James Dinning, head of the department of biochemistry at the University of Arkansas' Medical Center, Little Rock, and David W. Mullins, University of Arkansas president.

SLIDES—A slide presentation illustrating the roles of the agriculture college, college graduates and modern feeds in food production was shown at the Arkansas Formula Feed Conference. The slide presentation was sponsored by the Midwest Feed Manufacturers Assn. A set of slides developed for Arkansas is being given by Fred Darragh, left, president of the Midwest association, to Henry Niemeyer, president of the Arkansas Feed Manufacturers Assn.

Dr. T. S. Nelson, International Minerals & Chemical Corp., Skokie, Ill., asserted that percentage of bone ash is one of the most accurate criteria for ascertaining the state of phosphorus nutrition in animals. "Less variation occurs when this method is used than with other measurements among similarly fed animals. Furthermore, fewer animals are required to obtain valid differences," he noted.

The biological availability or biological value of a phosphate does not refer to the actual percentage of the total phosphorus that is available, he stressed. "Rather, it is a relative numerical value obtained by comparing the experimental phosphate to a reference phosphate."

Dr. Nelson gave the following comments about methods frequently used for measuring phosphorus utilization by animals:

"Growth and feed efficiency are among the least satisfactory criteria for measuring phosphorus availability. Solubility of phosphates in hydrochloric acid in our laboratory shows that this is a qualitative test only. Bone breaking strength is also of limited use—individual variation within treatments is greater than in other methods. Although not infallible, use of radioactive isotopes gives accurate results. The isotope dilution technique appears to be a reliable method."

Dr. Nelson outlined the bone ash method of determination, which he said is the most accurate method of determining biological value. He went on to list biological availabilities using this method as follows:

Beta-tricalcium phosphate	100
Monocalcium phosphate	120-130
Monosodium phosphate	115-125
Phosphoric acid	115-125
Dicalcium-monocalcium phosphate	105-115
Dicalcium phosphate	95-105
Defluorinated phosphate	
Group A	95-105
Group B	70- 80
Group C	55- 65
Curacao Island rock phosphate	65- 75
Soft phosphate with colloidal clay	25- 35

Other Speakers

The following researchers with the Arkansas station also gave papers: Dr. O. T. Stallcup told of recent developments in feeding dairy cows, Dr. O. H. Horton related recent developments in feeding dairy calves, Dr. E. H. Peterson listed ways to control chronic respiratory disease in poultry, B. N. McPherson discussed feeding value of grit for poultry, Dr. M. L. Ray covered creep feeding of beef calves, and Lionel Barton gave recent advances in nutrition of laying and breeding hens.

Other speakers included: Dr. James Dinning, head of the department of biochemistry at the University of Arkansas Medical Center, Little Rock, who spoke on the role of the biochemist in the formula feed industry; Roy Pruitt, director, St. Louis district, Food and Drug Administration, discussed problems concerning the feed industry and the Food and Drug Administration; Dr. David W. Mullins, University of Arkansas president, covered the topic, "Your University"; William Larson, represented the Midwest Feed Manufacturers Assn., Kansas City, with a report from the Midwest, and Henry DeSalvo reported for the Arkansas State Plant Board.

The following people were chairmen of various sessions. Henry Niemeyer, president of the Arkansas Feed Manufacturers Assn., Little Rock; Dr. Warren Gifford, head of the University of Arkansas department of animal industry and veterinary science; Collier Wenderoth, O.K. Feed Mills, Ft. Smith, and Fred Darragh, Little Rock, president, Midwest Feed Manufacturers Assn.

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Arkansas Feed Men Elect Officers

FAYETTEVILLE, ARK. — Henry Niemeyer of the Niemeyer Grain Co., Little Rock, has been elected president of the Arkansas Feed Manufacturers Assn.

Other officers, elected at the 10th annual Arkansas Formula Feed Conference on the University of Arkansas' Fayetteville campus, include: Donald Tyson, Tyson Poultry, Inc., Springdale, vice president, and J. W. Cobb, Cameron Feed Mills, North Little Rock, secretary-treasurer.

The new board of directors includes: the new officers, James Dunaway, Thibault Milling Co., Little Rock; Fred Darragh, Darragh Co., Little Rock; Ted Cameron, Cameron Feed Mills, North Little Rock; Harold Snyder, Arkansas Valley Industries, Dardanelle; Collier Wenderoth, O.K. Feed Mills, Fort Smith; H. W. Davis, Horseshoe Mills, Pine Bluff; Gail Brown, Jeff D. Brown & Co., Springdale; Ford Butler, Peterson Produce, Decatur, and Raymond Higgins of General Mills in Hot Springs.

H. E. Wilson & Co. Names Vice President

EL PASO, TEXAS—Appointment of Lee Billstone as vice president of H. E. Wilson & Co. here has been announced by Claude H. Barry, president of the firm.

Lee Billstone

Mr. Billstone will be working principally in the merchandising of grain, protein meals and other feed ingredients.

Mr. Billstone was with the Colorado Milling & Elevator Co. for 19 years. His experience with that firm included seven years as ingredient purchasing agent for the Ranch-Way Feed division in Denver and three years as Ranch-Way division manager for Idaho and Oregon with responsibility of feed plant management and supervision of all phases of production and distribution of formula feeds in that area.

Georgia Meeting

GAINESVILLE, GA. — Efforts being made to combat poultry condemnations will be the topic for discussion at the meeting of Georgia feed dealers here Oct. 11. The meeting had originally been scheduled for Sept. 21 but was postponed so that notices could be sent to all dealers.

The meeting will be held in conjunction with the regular monthly meeting of the Georgia Feed Dealers Assn., according to the announcement.

SALESMEN

(Continued from page 8)

men. Our plan provides security with a base salary, and salesmen are stimulated with a quarterly or yearly commission. Different rates are paid on different types of feeds, depending on earnings. Also, lower rates are paid on feeds where the company accepts risks. Different rates apply, too, in low volume territories.

We encourage sales drive by not placing a ceiling on commissions. Sales costs are reduced by larger volume. No commissions are paid on sales which result in credit losses. (He later explained in response to a question that if a salesman has failed to give accurate information on an account, he believes the salesman should be responsible for part of any loss. However, if division and headquarters offices determine the salesman has done his job in providing credit information, he is not penalized.)

Mr. Grier: About a year ago Nutrena shifted from a base salary ($350 to $450 a month) and expense allowance plus bonus on tonnage to a new plan. It was felt that as the feed market had changed, the plan no longer suited the company's needs. Inequities developed because of shifting demand for complete feeds and concentrates, and some windfalls and unfairness resulted. Also, it lacked appeal in hiring salesmen and made it necessary to shift men around in order to provide income opportunities for individuals.

The new plan places the base salary on a much higher level, based on what management reasonably expects of the salesman. A recognition bonus is paid to some 25 to 50% of the men who qualify. Salesmen get either a significant bonus or none.

Each salesman prepares a six-month objective, describing things he intends to do that result in tonnage. After the six-month period, the salesman writes his own review of his accomplishments, and the reviews are forwarded, with comments and recommendations from the district managers, to the sales manager, who decides on bonus payments. These are paid once a year.

The sales cost per ton is higher under the new system, but management anticipated this. The system provides recognition for top performers and readily identifies poor performers. Other advantages are that better applicants are attracted to sales positions and the salesmen have no doubt that the district manager is their boss.

Mr. Runke: Recognizing that salesmen are money-motivated, we operate close to a direct commission system, with some security provided. Not too much of a ceiling is placed on possible earnings. A separate system is used for turkey feed sales.

Drawing accounts are provided, from $325 a month on up. Automobiles and expenses are provided, with salesmen reporting personal expenses weekly when traveling, plus a modest allowance for entertainment provided in the interests of developing business.

Smaller commission rates are provided on complete feeds and larger ones apply to such items as dog food and milk replacers. On the 20th of each month the salesman gets a commission report and the draw is deducted. Where help is needed, an assistant is assigned to the territory and an allowance for his compensation is made from the territory commission.

On turkey business, an annual settlement is made. A larger draw is provided for these men so that the company is not holding back large sums.

Mr. Steinmetz: Pillsbury compensates salesmen on a point system, with a certain number of achievement points required to earn the base pay. A higher payment level is paid in the next point bracket and a still higher level in the third, or maximum, bracket. Points are related to profits and ease or difficulty of selling, specialized products, company program feeds and other factors. It can be adjusted seasonally.

No plan is better than the merchandising you put behind it. Sales managers have to tell salesmen how they can improve their earnings. Payment is made quarterly.

Credit Losses

Different views on the salesman's responsibility for credit losses were expressed. In addition to the statement by Mr. Huckabee (above), these comments were made during the question period:

"We haven't felt justified in placing the responsibility on salesmen for such losses," Mr. Runke said.

"We do consider it and do not pay commissions on bad debt accounts," Mr. Steinmetz said.

"If the sales manager and the credit manager approve a credit application," Mr. Herron commented, "we feel the salesman should not be held responsible. We want him to be volume conscious."

After discussion which indicated a wide range of salesmen's income levels in most companies, a question was raised as to the per ton cost of sales referred to above. Mr. Steinmetz commented that surveys show that there is not much difference in these costs among different companies.

Salary Administration

In response to a question, Mr. Grier explained that salesmen at the top salary level do not necessarily get a performance bonus. "The incentive bonus is for the men who do a better job than you expect of them," he said. "Our plan requires salary administration, whereas if compensation is determined on a scale, you don't place as much an administrative responsibility on the district manager. Selling more tons is only part of the answer."

Some discussion of controlling the amount a salesman earns by reducing his territory followed. Mr. Huckabee commented that such moves should be considered carefully since the more a man sells, the lower are the sales costs.

Mr. Grier made this closing observation: "The salesman now is part of a team, including the credit manager, the technical people and the regional sales managers. He is a key man, but he depends more on the others these days. He is no longer the lone wolf of a few years ago."

FEED MILL GUTTED

DALTON, OHIO—A spectacular blaze caused at least $50,000 damage to the Dalton Equity, Inc., a farmers' cooperative grain and feed mill, recently. The fire, of undetermined origin, gutted the inside of the exchange's grain processing department. Firemen, however, kept the flames from spreading to an adjacent warehouse and an under-construction feed mill.

One bag broke . . . the other has two-way stretch

The one with stretch is made of H&W's new, high-strength Expanda Kraft.

A large tractor-trailer ran over both bags of equal weight and plies. The regular kraft bag burst under pressure—see the tell-tale flour on the inside tire tread. But look at Expanda Kraft —*not a sign of breakage!*

Expanda Kraft is stronger, because it's made by a special roll-crepe process. It's resilient, has two-way stretch, and soaks up shock. And Expanda Kraft is available in white, semi-bleached and natural.

Expanda Kraft comes in 40, 50, 60, 70, 80 and 100-pound basis weights. *For samples and information,* write Hollingsworth & Whitney, Division of Scott Paper Company, Chester, Pa.

Safeguard your product in EXPANDA KRAFT®

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The FEED MARKET

PRICE QUOTATIONS, MARKET TRENDS
OF PRINCIPAL INGREDIENTS

NOTE: Quotations on feed ingredients shown in these and adjoining columns are wholesale prices, per ton, bulk, for prompt delivery, unless otherwise noted. They are the latest quotations available from Feedstuffs correspondents and are not necessarily those in effect on date of publication. The prices represent fair average trading values and do not necessarily represent extreme low or high levels at which individual sales might have occurred. A descriptive summary of supply and demand factors prevalent in the feed market appears on page 2.

A AND D FEEDING OIL

Chicago: Demand fair; trend steady; supply ample; straight A feeding oil, with 10,000 units vitamin A per gram, 740¢ a million units of vitamin A, L.c.l., packed in 55 gal. drums, f.o.b. Chicago, drums included.

Minneapolis: Demand fair; supply ample; 10,000 A 31¢ lb.; 300 D, 2,250 A 17½¢ lb.; 300 D, 1,500 A 16¢ lb.; 300 D, 750 A 15¾¢ lb.

Boston: Demand slow; supply plentiful; 400 D, 2,000 A 19¼¢ lb.; 300 D, 3,000 A 19¢; 300 D, 2,250 A 17½¢; 300 D, 1,500 A 16¢; 300 D, 750 A 13¾¢.

Denver: Demand better; trend steady; supply ample; 21¢ lb.

ALFALFA MEAL

Memphis: Demand fair; trend steady; supply ample; dehydrated, 17% protein, guaranteed 100,000 units vitamin A $47.

Ft. Worth: Demand fair; light offerings; sacked: dehydrated, 17%, 100,000 A $54.50, truck or rail; suncured: 13% ¼-in. grind, No. 1 $47@48, truck; 15% fine ground, dry $50; with 2% fat added $53, rail or truck.

Boston: Demand fair; supply adequate; dehydrated, 17% $50; suncured, 13% $49; pellets $51; all sacked.

Chicago: Demand and supply fair; trend mixed; dehydrated, 17% protein, 100,000 units vitamin A $46@47.

Seattle: Demand fair; trend firm; supply good; 15% protein suncured $49, 150,000 A unit dehydrated $70, both delivered truck loads, sacked.

St. Louis: Demand slow; trend firm; supply limited; suncured, 13% fine, sacked $47; dehydrated, 17%, 100,000 A pellets, demand fair, trend firm, supply ample, bulk $48.50.

Los Angeles: Demand moderate; supply ample; trend steady; dehydrated meal, 17% protein, 100,000 A $51; dehydrated pellet meal, 17% protein, 100,000 A $52@54; suncured meal, 15% protein $45@46; suncured crumbles, 15% protein $47@48.

Cincinnati: Demand fair; trend higher; supply adequate; 17% dehydrated, 100,000 vitamin A $51.

Omaha: Demand fair; trend steady; supply ample; 17% dehydrated, 100,000 A units, bulk pellets $43; sacked meal $47, Omaha basis.

Philadelphia: Demand slow; supply fair; 17% $52.50.

Buffalo: Demand fair to poor; trend steady; supply fair; $56, Boston.

Denver: Demand fair; trend steady; supply ample; dehydrated meal, sacked $52; bulk pellets $47.

Kansas City: Demand fair; trend stronger; supply adequate; 17% dehydrated alfalfa, 100,000 A on arrival, pellets $43@44, reground pellets $44@45; 15% dehydrated alfalfa, 125,000 A on arrival, pellets $44@47, reground pellets $47@48; 20% dehydrated alfalfa, 150,000 A on arrival, pellets $45@50, reground pellets $47@51; suncured alfalfa, demand slow, supply tight, 13% pellets $36@37, bulk; No. 1 ¼-in. $38.50, sacked.

Portland: Demand fair; trend higher; supply ample; $46@49, sacked.

ANIMAL FATS (STABILIZED)

Ft. Worth: Demand fair; supply sufficient; prime tallow, tank cars 5¾¢; drums 6¾¢; f.o.b. north Texas packing plants with returnable drums.

Louisville: Demand dull; trend weak; supply good; all off ¼¢ lb.; bleachable white 5¾¢, white tallow 6¼¢ lb., yellow grease 5¾¢ lb., all in tanks.

Chicago: Demand good; trend firm; supply moderate; truck tank or carlots, bleachable fancy tallow $5.75 cwt., yellow grease $5 cwt.

Ogden: Supply ample; $5.50 cwt.

San Francisco: Demand fair; supply ample; bleachable fancy 6¢ lb.; yellow grease 4¾¢ lb.

Boston: Demand slow; supply plentiful; tallow 5¾¢ lb.; yellow grease 4¾¢ lb.

Kansas City: Demand fair; trend easy; supply ample; stabilized prime tallow 5¼¢ lb.

Salisbury, Md.: Demand excellent; supply limited; 5½¢ lb.

St. Paul: Demand fair; supply ample; steady market; bleachable fancy 5½¢ lb., f.o.b. producer's plant.

BARLEY FEED

Milwaukee: Demand limited; trend unchanged; supply ample; feed barley $2¢ bu.; barley feed $35, sacked; ground feed barley $41.50 sacked.

Baltimore: Demand fair; trend firm; supply ample; $44.50, sacked.

Chicago: Demand fair; trend steady; supply ample; $34, sacked.

Seattle: Demand and supply good; trend firm; $45, truck lots.

San Francisco: Demand fair; supply ample; rolled $58, ground $57.

Ogden: Supply ample; rolled $45@46; whole $40@41.

Los Angeles: Demand slow; trend steady; supply adequate; standard rolled $3 cwt., standard ground $3 cwt., both sacked.

Boston: Demand and supply steady; $46, sacked.

Philadelphia: Demand slow; supply fair; $41.50.

Portland: Demand good; trend unchanged to higher; supply tight; $44@44.50.

Denver: Demand fair; trend steady; supply tight; rolled $2.10 bulk, $2.30 sacked.

BENTONITE (SODIUM)

Chicago: Demand fair; supply ample; trend steady; f.o.b. Wyoming and South Dakota shipping points: 200 mesh $14 and net $13.75; fine granular (80 to 100 mesh) $14.25 and net $14; granular, 30 mesh $16.50 and net $16.25.

Cincinnati: Demand steady; supply adequate; f.o.b. Cincinnati, minimum 30 ton carlots: 30 granular $31.50, less than carlots $40; 200 mesh fine $31, less than carlots $40.

Denver: Demand slow; trend steady; supply ample; $24.50, warehouse.

BLOOD FLOUR

Louisville: Demand slow; trend steady; supply good; $70@75, sacked.

BLOOD MEAL

Ogden: Supply ample; $80.50.

Louisville: Demand dull; trend steady; supply good; $70@75, sacked.

Chicago: Demand and supply fair; trend steady; 80% protein $115, sacked.

San Francisco: Demand and supply fair; $5 a unit of ammonia, sacked.

Los Angeles: Demand slow; trend steady; supply adequate; $6 a unit of ammonia, sacked.

Omaha: Demand and supply fair; trend improving; 80% $55, sacked, Omaha.

Portland: Demand fair; supply ample; trend unchanged; $110, sacked.

BONE MEAL (STEAMED)

Louisville: Demand slow; trend steady; supply light; $80@85, sacked.

Chicago: Demand slow; trend steady; supply fair; $80, sacked.

Ft. Worth: Demand fair; supply light; $100, sacked, f.o.b. Ft. Worth, local manufacture.

Seattle: Demand good; trend firm; supply limited; $92, sacked, f.o.b. car Seattle.

Cincinnati: Demand fair; trend steady; supply ample; $95, sacked, Cincinnati.

San Francisco: Demand good; supply ample; $75, sacked.

Los Angeles: Demand and trend steady; supply very limited; imported $80.75, 20 ton lots, sacked.

Boston: Demand and supply steady; $100.

Denver: Demand normal; trend steady; supply ample; $110, Denver.

Portland: Demand fair; supply adequate; trend unchanged; $97@97.50, sacked.

Buffalo: Demand and supply light; trend steady; $97, sacked.

BREWERS DRIED GRAINS

San Francisco: Demand fair; supply ample; $51, sacked.

St. Louis: Demand good; trend firm; supply limited; $42.

Los Angeles: Demand and trend steady; supply adequate; $50.

Boston: Demand good; supply very tight; 24% $54, nominal; 26% $55, nominal.

Chicago: Demand good; trend steady; supply fair; 26% protein $42@42.50.

Milwaukee: Demand fair; trend steady; supply limited; $44 bulk, $52 sacked.

Cincinnati: Demand fair; trend steady; supply adequate; $41.

Louisville: Demand slow; trend steady; supply good; $50, sacked.

Ft. Worth: Demand fair; supply sufficient; 26% protein $49.90, October.

Philadelphia: Demand slow; supply light; $54.50.

Buffalo: Demand fair; trend higher; supply fair to poor; $55, Boston.

BREWERS DRIED YEAST

Seattle: Demand slow; trend steady; supply ample; $12 cwt., sacked.

Los Angeles: Demand and trend steady; supply adequate; 10¢ lb., 5 ton lots; 11¢ lb., 1 ton lots; 12¢ lb., less than ton lots; all sacked.

Cincinnati: Carlots 11¢ lb.; 5 ton lots 11¢ lb.; ton lots 11½¢ lb.

Louisville: Demand slow; trend steady; supply good; 10@10½¢ lb., sacked.

Chicago: Demand fair; trend steady; supply ample; 9½@10¢ lb., carlots, sacked; 9¾@12¾¢ lb., l.c.l.

Milwaukee: Demand fair; trend steady; supply ample; 10⅛@13⅛¢ lb., ton lots, sacked.

St. Louis: Demand fair; trend firm; supply ample; 9½@16¢ lb., carlots, sacked; 10⅛¢ lb., ton lots; 11⅛¢ lb., less than ton lots.

Pittsburgh: Carlots 10¢ lb.; 5 ton lots 11¢ lb.; ton lots 11½¢ lb., all sacked.

New Orleans: Carlots 10¢ lb.; 5 ton lots 11¢ lb.; ton lots 11½¢ lb., all sacked.

New York: Carlots 9¾¢ lb., 10 ton lots 10¢ lb.; 5 ton lots 10½¢ lb., ton lots 11¢ lb., all sacked, f.o.b. New Jersey.

San Francisco: Demand fair; supply good; 10¢ lb., sacked.

Omaha: Demand slow; trend poor; supply plentiful; 11¢ lb.

Boston: Demand and supply steady; 11¢ lb.

Denver: Demand light; trend steady; supply ample; 9¢ lb.

Portland: Demand dependable; supply ample; trend steady; 11@12¢ lb.

Buffalo: Demand fair; trend steady; supply ample; $9.05 cwt.

BUTTERMILK (CONDENSED)

Boston: Demand and supply steady; 4¼¢ lb.

Louisville: Demand slow; trend steady; supply light; $4.25 cwt.

Chicago: Demand slow; trend firm; supply ample; 500 lb. barrels $3.25@3.50 cwt.

Ogden: Supply good; $4.40 cwt., drum.

San Francisco: Demand fair; supply good; $5 cwt., drums.

Los Angeles: Demand and supply limited; trend steady; 5½¢ lb., 100 lb. lots; 4¾¢ lb., 500 lb. lots; both in barrels.

Philadelphia: Demand slow; supply fair; $4.25 cwt.

CALCITE CRYSTALS AND FLOUR

(All prices net, sacked, including freight)

New York: Crystals $16.28, flour $10.28.
Buffalo: Crystals $17.11, flour $11.11.
Toledo: Crystals $18.96, flour $12.96.
Boston: Crystals $17.63, flour $11.63.
Lime Crest, N.J.: Crystals $11.50, flour $5.50.

CALCIUM CARBONATE

Chicago: Demand fair; trend steady; supply ample; fine grind, plain, 100 lb. bags $9.54; bulk, in hopper cars $7.54; bulk, in boxcars $8.04; granular grind $1 premium.

Minneapolis: Fine grind, 50 lb. bags $13.75; 100 lb. bags $13; bulk, boxcar $10.50; bulk, hopper $10; coarse grind $1 premium, delivered Minneapolis.

Cincinnati: Demand fair; trend steady; supply adequate; $7@7.50 cwt.

Seattle: Demand and trend steady; supply good; $14, sacked, ex-warehouse.

Los Angeles: Demand and trend steady; supply adequate; flour $10.15, 20 ton cars; meal $11.15, 20 ton cars; both sacked.

CHARCOAL

San Francisco: Demand steady; supply ample; $141, sacked.

Los Angeles: Demand slow; trend unchanged; supply adequate; hardwood poultry $156, less than ton lots; $144.40, ton lots, both sacked.

Chicago: Demand fair; trend firm; supply fair; 50 lb. multiwalls $110.

Boston: Demand and supply light; granular No. 6 $110.

COCONUT OIL MEAL

San Francisco: Demand fair; supply ample; solvent $52; expeller $69.

Seattle: Demand fair; trend easy; supply ample; solvent type $75, sacked, f.o.b. car Seattle.

Los Angeles: Demand limited; supply moderate; trend steady; copra cake $63, October.

Portland: Demand slow; trend lower; supply plentiful; $66.

COD LIVER OIL (FORTIFIED)

Boston: Demand slow; supply plentiful; 300 D, 3,000 A 20¢ lb.; 400 D, 2,250 A 18½¢; 300 D, 2,250 A 18¢; 600 D, 1,500 A 17¢; 300 D, 1,500 A 16½¢.

CONDENSED FISH SOLUBLES

Los Angeles: Demand and trend steady; supply adequate; 2¾¢ lb.

Boston: Demand very slow; supply ample; 2¢ lb., nominal.

Denver: Demand light; trend steady; supply ample; 2¢ lb., West Coast.

CORN GLUTEN FEED AND MEAL

(All quotations for all cities are bulk basis, sacked basis $5 more)

Minneapolis: Feed $43.60, meal $66.60.
Atlanta: Feed $47, meal $70.
Birmingham: Feed $45.60, meal $68.60.
Boston: Feed $48.50, meal $71.50.
Chicago: Feed $37, meal $60.
Cleveland: Feed $44.90, meal $67.90.
Denver: Feed $47.20, meal $70.20.
Ft. Worth: Feed $45.70, meal $68.70.
Indianapolis: Feed $42.50, meal $65.20.
Kansas City: Feed $37, meal $60.
Louisville: Feed $44.60, meal $66.60.
New Orleans: Feed $46.90, meal $69.90.
New York: Feed $48.10, meal $71.10.
Norfolk: Feed $47.50, meal $70.50.
Philadelphia: Feed $47.70, meal $70.70.
St. Louis: Feed $37, meal $60.

CORN OIL MEAL

Cincinnati: Demand fair; trend steady; supply adequate; $61.

Seattle: Demand good; trend easy; supply ample; $54, carlots.

Louisville: Demand slow; trend steady; supply light; no demand in this market; $49.60.

COTTONSEED OIL MEAL

Cincinnati: Demand poor; trend higher; supply adequate; $61.

Los Angeles: Demand steady; trend firmer; supply adequate; $53@54.

St. Louis: Demand slow; trend easy; supply ample; solvent $52.50.

Memphis: Demand poor; trend weak; supply ample; prime 41% protein, old process $51.50; new process, 41% solvent $49.

Chicago: Demand quiet; trend easier; supply fair; Memphis basis, hydraulic $52.50.

Boston: Demand and supply light; $75, sacked.

Ft. Worth: Demand good; supply sufficient; 41% old process $61, f.o.b. mills Ft. Worth; carlots, solvent, 2% fat added $56.50, October; $56.50, October-November-December, delivered Ft. Worth; pellets $2 additional; hulls $19.

Louisville: Demand fair; trend steady; supply normal; new or old process $61.50, sacked.

Ogden: Supply good; 41% $64@66.

Seattle: Demand fair; trend easy; supply ample; $67, f.o.b. car Seattle.

San Francisco: Demand fair; supply ample; 41% $59, 44% $62.

Wichita: Demand fair; supply ample; 41% old process $60, sacked.

Omaha: Demand slow; trend steady; supply ample; 41% solvent $58.20, delivered Omaha.

Philadelphia: Demand and supply fair; $66, trucks or 30 ton cars.

Denver: Demand and supply fair; trend steady; $59.

Portland: Demand slow; trend steady; supply ample; $63@64.

Buffalo: Demand fair to poor; trend steady to lower; supply adequate; $73, sacked, Boston.

Kansas City: Demand slow; trend steady; supply ample; 41% old process $53@53.50; solvent process $49.50@50, Memphis.

CURACAO PHOSPHATE

New York: Minimum 14% phosphorus $46.50 sacked, $43.50 bulk, f.o.b. New Orleans, Jacksonville and Philadelphia.

D ACTIVATED ANIMAL STEROL (POWDERED)

Cincinnati: Demand fair; trend steady; supply ample; 1,500 ICU 11@12¢ lb.; 3,000 ICU 10¢ lb., warehouse.

Kansas City: Demand fair; trend steady; supply ample; 1,500 ICU 9¾¢ lb.; 3,000 ICU 11¢ lb.

D ACTIVATED PLANT STEROL (POWDERED)

Chicago: Demand fair; supply ample; 4,000,000 U.S.P. units per lb., 15¢ lb. in ton lots, less than ton lots 17¢ lb.; 12,000,000 units per lb., 5 tons to a carload 28¢ lb., ton lots and less 30¢ lb.

DEFLUORINATED PHOSPHATE

Coronet, Fla.: Minimum phosphorus 18%, minimum calcium 31%, maximum calcium 34%, maximum fluorine .18%; guaranteed uniform analysis; carload $66.35, sacked, 100 lb. multiwall bags, bulk $63.25; truck load $67, sacked, in 100 lb. multiwall bags, bulk $64, f.o.b. Coronet, Fla.

Tupelo, Miss.: Minimum phosphorus 14%, minimum calcium 28%, maximum fluorine .14% $57.07, f.o.b. Tupelo in 100 lb. multiwall bags, $54.07 bulk.

Waiee, Tenn.: Minimum phosphorus 18%, minimum calcium 33%, maximum 36%, maximum fluorine .18% $71.80 (or $3.99 per unit of P), f.o.b. Waiee in 100 lb. multiwall bags, $3 less in bulk.

Butte, Mont.: Minimum phosphorus 18%, minimum calcium 32%, maximum calcium 36%, maximum fluorine .18%, $61 (or $4.50 per unit of P), f.o.b. Butte, 100 lb. multiwall bags; bulk $78; truck lots of less than 10 tons $10 more, bagged or bulk.

Houston: Minimum phosphorus 19%, minimum calcium 32%, maximum calcium 36%, maximum fluorine .19% $74.35 net ton, f.o.b. Houston, 100 lb. multiwall bags; $71.35 bulk.

Cincinnati: 18% phosphorus $81.02; 14% phosphorus $71.03, f.o.b. Cincinnati.

Portland: Demand fair; supply ample; trend steady; $93.50 for product carrying a minimum of 18% phosphorus, 31.5% calcium and a maximum of 0.1% fluorine; $92 dock for a minimum of 10 ton lots.

DICALCIUM PHOSPHATE

Trenton, Mich.: 18½% P $33, bulk, boxcar/hopper car; $36, bagged, in carloads or truck loads; $96 bagged, in less than carload lots; 21% P, $94.65, bulk, boxcar/hopper car; $97.64, bagged, in carloads or truck loads; $107.65, bagged, less than carload; all prices f.o.b. Trenton, freight equalized with nearest producing point.

Chicago: Bulk 18.5% phosphorus, carlots or trucks $83; 20,000 lb. or more $80 net ton in 100 lb. papers; less than 20,000 lb. $96, basis Chicago Heights, Ill., or Nashville, Tenn.; 21% phosphorus, carlots or trucks, bulk $94.65; 20,000 lb. or more, per net ton in 100 lb. papers, $97.65 and less than 20,000 lb., $107.65, basis Chicago Heights, Ill., or Nashville, Tenn.

Bonnie, Fla.: Minimum phosphorus 18½%, granular, $86 (or $4.65 unit of P), freight equalized from nearest producing point, carload basis; bulk carloads $3 less; in truck loads of less than 10 tons, $10 more. Western slope prices, for delivery at established railroad stations and by truck at regular feed mixing plants: California, Arizona, Nevada and Utah, $99.90; Washington, Oregon, Montana and Idaho, $107.15; bulk carloads $3 less; truck loads less than 10 tons, $10 more.

Columbia, Tenn.: Minimum phosphorus 18.5%, minimum calcium 24% $86, f.o.b. Columbia, in 100 lb. multiwall bags; freight equalized with nearest producing point, carload basis; bulk $3 ton less.

Texas City, Texas: Minimum phosphorus 18.5%, minimum calcium 26%, maximum calcium 23%, maximum fluorine .12%; carload and truck load $80.50, sacked in 100 lb. multiwall bags, bulk $77.50, f.o.b. Texas City.

Cincinnati: 18½% phosphorus $92.15, f.o.b. Cincinnati.

Denver: Demand fair to good; trend steady; supply ample; $93.50, delivered.

DISTILLERS DRIED GRAINS

Cincinnati: Demand fair; trend steady; supply adequate; $60.

San Francisco: Demand fair; supply ample; solubles $79, sacked.

Seattle: Demand fair; trend firm; none available; $69, sacked, delivered truck lots.

Louisville: Demand good; trend steady; supply light; for October, bourbon grains: light $55, dark $59, solubles $73, all sacked.

Boston: Demand active; supply nil; $63, nominal.

Philadelphia: Demand slow; supply light; $64.

Buffalo: Demand fair to good; trend steady to higher; supply poor; $64, Boston.

DRIED BEET PULP

Milwaukee: Demand and supply fair; trend weaker; old crop, plain $74.50, molasses $71; new crop, plain and molasses $51.50.

Ft. Worth: Demand fair; offerings extra light; plain $80.90, sacked, 50 lb. bags, October.

Ogden: Supply ample; $39@45.

Seattle: Demand good; trend firm; sup-

ply limited; $52, delivered carlots, sacked.

San Francisco: Demand good; supply fair; $41.30.

Los Angeles: Demand and trend steady; supply ample; $45.40@45.50.

Boston: Demand active; supply short; $58, sacked.

Denver: Demand good; trend steady; supply ample; $75 f.o.b.

Portland: Demand fair; trend lower on new crop basis; supply ample; molasses $48.60, sacked.

Buffalo: Too scarce to quote.

DRIED BUTTERMILK

Milwaukee: Demand and supply limited; trend unchanged; $12 cwt.

Louisville: Demand slow; trend steady; supply light; $12@12.50 cwt., sacked.

Chicago: Demand quiet; trend firm; supply fair; medium acid $11.25@11.75 cwt.; sweet cream $11.25@11.75 cwt.; both sacked.

San Francisco: Demand fair; supply ample; 13¼¢ lb., sacked.

Los Angeles: Demand slow; trend steady; supply adequate; 13¼@13¾¢ lb., sacked.

Boston: Demand light; supply short; 14¢ lb.

Portland: Demand fair; supply ample; trend unchanged; 13¢ lb.

Buffalo: Demand fair; trend steady; supply limited; $13.05 cwt.

DRIED CITRUS PULP

San Francisco: Demand and supply fair; meal $48, sacked.

Los Angeles: Demand steady; trend moderate; supply moderate; orange pulp $43, lemon pulp $41.

Boston: Demand slow; supply tight; $47.50, nominal, sacked.

Buffalo: Too scarce to quote.

DRIED SKIM MILK

Milwaukee: Demand and supply limited; trend unchanged; $12.75 cwt.

Boston: Demand good; supply scarce; 12½¢ lb.

Louisville: Demand slow; trend steady; supply ample; $12.50@13.50 cwt., sacked.

Cincinnati: Demand fair; trend steady; supply adequate; 12@13¢ lb., sacked.

San Francisco: Demand and supply fair; 14½¢ lb., sacked.

Chicago: Demand quiet; trend steady; supply fair; $11.25@11.75 cwt., sacked.

Ogden: Supply ample; $15.15 cwt., drum.

Omaha: Demand good; trend strong; supply short; 12¢ lb.

Los Angeles: Demand and supply limited; trend steady; 15¢ lb., less than ton lots; 14½¢ lb., ton lots; both sacked.

Philadelphia: Demand slow; supply fair; $13 cwt.

Minneapolis: Good demand; supply short; slightly stronger market, up ½¢ to 1¾¢ lb.

Buffalo: Demand fair; trend steady; supply ample; $13.85 cwt.

DRIED WHEY

Kansas City: Demand fair; trend steady; supply adequate; regular or partially delactosed $5 cwt., sacked.

Louisville: Demand dull; supply good; $6 cwt., sacked.

Ogden: Supply good; no quotations.

Seattle: Demand steady; trend easy; supply good; $5.85 cwt., ex-warehouse, l.c.l.

Cincinnati: Demand fair; trend steady; supply adequate; $5.75 cwt., sacked.

Ft. Worth: Demand fair; supply adequate; carlots, standard $5.50, sacked, delivered Ft. Worth; ton lots $5.75, f.o.b. warehouse Ft. Worth.

San Francisco: Demand steady; supply good; $5.25 cwt., sacked.

Chicago: Demand slow; trend steady; supply ample; $4.75 cwt., sacked.

Los Angeles: Demand and trend steady; supply adequate; $5.15 cwt., carloads; $5.35 cwt., l.c.l.; both sacked.

Boston: Demand good; supply good; 5¼¢ lb.

Omaha: Demand and trend fair; supply ample; $5 cwt.

Philadelphia: Demand slow; supply fair; $6.25 cwt.

Denver: Demand weak; trend steady; supply ample; $5.75, truck, delivered.

Minneapolis: Demand slow; supply ample; steady at $5.45 cwt.

Portland: Demand fair; supply ample; trend unchanged; $5.95 cwt., sacked.

FEATHER MEAL (HYDROLYZED)

Ft. Worth: Demand good; supply light; 85%-87% protein $70, sacked, f.o.b. trucks north Texas plants.

Los Angeles: Demand fair; trend steady; supply adequate; $1 a unit of protein, sacked.

Boston: Demand and supply fair; $69, nominal.

Salisbury, Md.: Demand spotty; excess supply; $70, f.o.b.

FISH MEAL

Omaha: Demand and trend good; supply plentiful; 60% menhaden $110, f.o.b. Omaha.

Los Angeles: Demand and trend steady; supply light; local production, 60% protein $1.55 a unit, sacked.

Chicago: Demand fair; supply good; trend steady to higher; sacked: menhaden, East Coast $90@93, Gulf $90@95; menhaden scraps, East Coast $56@59, Gulf $56@91; Canadian herring meal $1.65 a unit of protein.

Ft. Worth: Demand fair; supply of Peruvian limited, menhaden sufficient; sacked: 65% protein Peruvian $94.50, October; 60% protein menhaden $102, delivered Ft. Worth.

Seattle: Demand fair; trend firm; supply good; $1.70 a unit protein, ex-dock Seattle, sacked (Alaskan production).

San Francisco: Demand slow; supply ample; $1.50 a unit of protein.

Milwaukee: Demand fair; trend strong; supply good; 60% $116, sacked, Chicago basis.

Cincinnati: Demand fair; trend steady; supply adequate; $108.60.

Louisville: Demand dull; trend steady; supply light; $110, sacked.

Portland: Demand fair; trend higher; supply moderate; Peruvian $1.75 a protein unit, sacked.

Buffalo: Demand fair; trend steady; supply ample; 60% protein menhaden $103 bulk, $108 sacked.

Ogden: Supply ample; $1.05 a unit, f.o.b. Coast; 65% $105@108.

Boston: Demand fair; supply plentiful; sacked menhaden, 60% $90; red fish, 57% sacked $85.

Minneapolis: Demand fair; supply ample; market steady; West Coast 60% blended steady at $117, sacked, delivered; Alaskan herring steady at $1.52 a unit, and Canadian, October $1.55 a unit, both f.o.b. West Coast, subject to production.

Denver: Demand strong; trend steady; supply short; $1.54 a protein unit, f.o.b. West Coast.

HAY

Portland: Demand slow; trend steady; supply adequate; $34@35 ton baled, f.o.b. Portland-Seattle.

Louisville: Demand slow; trend steady; supply good; new hay taking over; local and nearby hay, any variety, No. 1 $38@39, No. 2 $26@28, straw $18@20.

Los Angeles: Trend steady; supply moderate; U.S. No. 1 $33@35, good demand; U.S. No. 2 leafy $29.50@31, U.S. No. 2 green $31@32, U.S. No. 2 $27@28, slow demand.

Boston: Demand slow; supply ample; No. 2 timothy $40@42.

Ft. Worth: Demand fair for alfalfa, practically nil for others; supply sufficient; carlots, baled, No. 1 alfalfa $40@42; No. 2 $38@40; No. 2 prairie, nominal $30@32; No. 2 Johnson, nominal $28@30, delivered Texas common points.

Ogden: Supply ample; $22 in the field; $25 in the barn.

Seattle: Demand fair; trend firm; supply good; alfalfa U. S. No. 2 green $34, delivered truck lots.

Wichita: Demand good; supply sufficient; prairie $21@23, alfalfa $22@25, baled.

Cincinnati: Demand good; trend steady; supply tight; No. 1 timothy $30; No. 2 timothy $27; No. 1 red clover $32; clover mixed with straw $25.

Philadelphia: Demand slow; supply fair; $25.50.

HOMINY FEED

Buffalo: Demand fair; trend higher; supply fair to poor; $52, Boston.

Kansas City: Demand fair; trend strong; supply tight; white $33, yellow $34@34.50.

Chicago: Demand fair; trend steady; supply adequate; $40.50.

Milwaukee: Demand and supply fair; trend unchanged; $45 sacked, $41 bulk, both Chicago basis.

Cincinnati: Demand fair; trend steady; supply adequate; $42.50.

Seattle: Demand fair; trend steady; none available; $54, delivered carlots.

Memphis: Demand poor; trend steady; supply ample; white $40.70, yellow $40.70.

Louisville: Demand slow; trend steady; supply light; $47.50, sacked.

St. Louis: Demand slow; trend steady; supply ample; yellow $38.50.

Boston: Demand fair; supply tight; $51.

LINSEED OIL MEAL

Boston: Demand slow; supply light; $68.

Wichita: Demand fair; supply ample; 34% $78, sacked.

Philadelphia: Demand slow; supply light; 34% $67.75.

Louisville: Demand slow; trend steady; supply ample; old process $75, new process $70, both sacked.

Chicago: Demand slow; trend easier; supply ample; Minneapolis basis, solvent $49.50, expeller $56.50.

Minneapolis: Firm market; 34% solvent steady at $49.50@50; 32% expeller, steady at $56.50.

Seattle: Demand fair; trend steady; supply good; 34% protein (Montana) $55, delivered carloads, sacked.

Milwaukee: Demand limited; trend weaker; supply fair; expeller $66.50, solvent $50, both Chicago basis.

Kansas City: Demand slow; trend steady to easy; supply adequate; solvent process $49.50@50; old process $56@56.50; Minneapolis.

Portland: Demand slow; trend steady; supply adequate; $51.75, sacked.

Cincinnati: Demand poor; trend steady; supply adequate; new process $51, old process $57.50, Minneapolis.

San Francisco: Demand fair; supply ample; $69.50.

Los Angeles: Demand light; trend easier; supply adequate; local production, 31% protein $71, new crop.

Ft. Worth: Demand slow; supply sufficient; 34% protein, solvent $66.50 immediate, $65 October.

Omaha: Demand fair; trend steady; supply ample; 34% solvent $65.80 bulk; 32% old process $62.30, Omaha basis.

Denver: Demand slow; trend steady; supply ample; $68.30, sacked.

LIVER AND GLANDULAR MEAL

Omaha: Demand and trend fair; supply ample; 65% $175, sacked, Omaha.

MALT SPROUTS

Chicago: Demand fair; trend uneven; supply light; No. 1 uneven bags $40.

Milwaukee: Demand good; trend firm; supply limited; $35@36.50 bulk; uneven bags $40; even bags $43.50.

Cincinnati: Demand fair; trend steady; supply adequate; No. 1 $42.00.

Boston: Demand and supply limited; $48, nominal, sacked.

MEAT AND BONE MEAL

Boston: Demand and supply steady; $1 a protein unit; converted, 50% $62.50.

St. Paul: Steady market; demand fair; supplies ample; $72@75.

Louisville: Demand dull; trend weak; supply good; $70@75, sacked.

St. Louis: Demand fair; trend steady; supply adequate; $67.50.

San Francisco: Demand fair; supply ample; $1.40 a unit of protein.

Los Angeles: Demand limited; supply moderate; trend steady; 50% protein $1.40 a unit.

Ogden: Supply ample; 50% protein $75 in 100 lb. bags.

Ft. Worth: Demand fair; supply sufficient; meat and bone, 50% $68 bulk, $71 sacked, f.o.b. Ft. Worth.

Cincinnati: Demand good; trend steady; supply fair; $70, Cincinnati.

Seattle: Demand good; trend easy; supply ample; $1.45 a unit protein, ex-processing plant.

Chicago: Demand quiet; trend firm; supply adequate; 50% protein $77.50, sacked.

Portland: Demand good; trend higher; supply tight; $69.50, sacked.

Buffalo: Demand fair; supply light; trend barely steady; 50% meat scraps $70 bulk, $75 sacked.

Kansas City: Demand fairly good; trend easy; supply ample; 50% $67.50@70.

Omaha: Demand and supply good; trend strong; $75.

Wichita: Demand fair; supply sufficient; 50% $80, sacked, f.o.b. plant.

Denver: Demand fair; trend steady; supply ample; $62.50 bulk, $65 sacked.

MILLFEED

Minneapolis: Supplies heavy but demand good enough to take care of most excess; bran and middlings $23, sacked, steady for bran, up 50¢ for middlings; red dog down $1@1.50 to $42.50@42, sacked.

Kansas City: Demand good; trend steady; supply ample; sacked bran $32.50@33, shorts $32.50@33; bulk bran $28@28.50, shorts $29@29.50, middlings $28.75@29.25.

Chicago: Prices recovered $1@1.50 of their decline of the past ten days or so, apparently stemmed almost entirely from a good general demand rather than from any drying-up in offerings as mills have been running heavily and there has been no particular shortage of offerings at any time the past week; carlots: standard bran $33, standard midds. $34.50, red dog $42.

Ft. Worth: Demand fair; supply sufficient; bran bulk $37.50, burlaps $41; gray shorts bulk $38, burlaps $41; bulk middlings $38, delivered Texas common points; bran $1 higher, shorts and middlings $1 higher compared with previous week.

Wichita: Demand fair; supply sufficient; Oct. 3, basis Kansas City: bran $32.25@32.75, shorts $32.25@32.75, sacked; both bran and shorts advanced $1, compared with the preceding week.

St. Louis: Demand fair; trend steady; supply ample; sacked bran $37.50, shorts $37.50; bulk bran $33, middlings $33.

Louisville: Demand fair; trend stronger; supply good; up $1; bran $43.60, mixed feed $44.10, shorts $45.10, all sacked.

Omaha: Demand fair; trend strong; supply tight; sacked bran $32.50; sacked gray shorts $33.50; bulk standard midds. $33; all Omaha basis.

Memphis: Demand poor; trend steady; supply ample; wheat bran $36.20, gray shorts $36.70, standard midds. $36.20.

Cincinnati: Demand fair; trend steady; supply adequate; bran $38, middlings $39.

Buffalo: Prices on way up, distress supplies resulting from strike mostly alleviated, demand good; sacked differential on bran and middlings widened out to $5.50 from $5 as a result of normal demand but insufficient supplies; bulk bran and middlings up $1; sacked bran and middlings up $1.50; red dog unchanged; Oct. 5 quotations: bulk bran $34@34.50, sacked $39.50@40; bulk middlings $34.50@35, sacked $40@40.50; bulk red dog $43@44.50, sacked $48.50@49.50.

Boston: Demand cautious; supply ample; bran $43, middlings $44.

Philadelphia: Demand spotty; trend unsettled; supply fair; bran $41.50, standard midds. $41.90, red dog $52.

Ogden: Supply good; to Utah and Idaho: red bran and mill run $36, middlings $41; to Denver: red bran and mill run $43, middlings $48; to California: red bran and mill run $43.50, middlings $48.50, f.o.b. San Francisco and Los Angeles.

Denver: Demand good; trend stronger; supply ample; shorts $36, bran $36, mill run $36.

Seattle: Demand fair; trend firm; supply ample; $37, delivered common transit points, carlots.

Portland: Demand slow; trend steady; supply fair; $36@37.

San Francisco: Demand good; supply fair; millfeed $44; red bran $47.

Los Angeles: Demand improved; trend firmer; supply adequate; standard mill run $44@44.50; red bran $46@46.50.

MINERAL FEED

San Francisco: Demand steady; supply good; all-purpose with iodine $70, sacked.

Seattle: Demand fair; trend steady; supply good; mixer-mineral $48, all-purpose mineral $85, both ex-warehouse, sacked.

Ft. Worth: Demand fair; supply adequate; all-purpose granules $90, block $70; mineral phosphorus 5% granules $106, block $113; cattle-sheep mineral 7% phosphorus granules $100, block $107; hog mineral phosphorus 3½% granules $87, phosphorus 2% $77 (all in 50 lb. paper bags).

Sioux City: 50 lb. mineral blocks 8.2% phosphorus $93; 7.5% phenothiazine sheep mineral blocks $4 each.

Portland: Demand fair; supply ample; trend unchanged; $44@45, sacked.

Ogden: Supply ample; $113 ton in 50 lb. blocks; $103 ton, granular, 50 lb. bags.

Wichita: Demand good; supply sufficient; all-purpose with iodine, 50 lb. blocks $97.50; 100 lb. bags $92.50, f.o.b. plant.

MOLASSES

St. Louis: Demand slow; trend firm; supply adequate; 12¼¢ gal, tank car, New Orleans.

Kansas City: Demand fair; trend steady; supply ample; blackstrap 12¼@12½¢ gal., New Orleans.

Minneapolis: Steady market; blackstrap $30, tank truck, delivered; beet $26; blend $28.

Buffalo: Demand fair; trend steady; supply adequate; 14¢ gal., f.o.b. Albany.

Louisville: Demand slow; trend steady; supply good; 13¢ gal., tank car lots, f.o.b. Gulf ports.

Seattle: Demand fair; trend firm; supply good; $31.25, f.o.b. Seattle, tank truck lots.

Los Angeles: Demand fair; trend firmer; supply adequate; $22.50, f.o.b. tank cars; $22.75, f.o.b. tank trucks.

Cincinnati: Demand fair; trend steady; supply adequate; 12@12½¢ gal., New Orleans.

Milwaukee: Demand fair; trend firm; supply ample; blackstrap 11½¢ gal., f.o.b. New Orleans.

Memphis: Demand fair; trend steady to higher; supply ample; blackstrap 11½@12½¢ gal., tank car, f.o.b. New Orleans, and $28.50 ton, delivered Memphis, truck.

Ft. Worth: Demand fair; supply sufficient; blackstrap 12½¢ gal., f.o.b. Houston; delivered Ft. Worth truck $28.07 seller's market price on date of shipment.

San Francisco: Demand and supply good; $22.50, f.o.b. cars Richmond, Cal.

Boston: Demand fair; supply ample; 14¢ gal. in tank cars.

Denver: Demand fair; trend steady; supply ample; 11½¢ gal., New Orleans; $34.50 ton, Denver.

OAT PRODUCTS

Seattle: Demand good; trend firm; supply fair; oat feed $55, delivered truck lots, 36 lb. or better, new crop.

Los Angeles: Demand slow; trend firmer; supply adequate; local production, pulverized $67, sacked.

Boston: Demand fair; supply adequate; white pulverized $54.50, sacked; reground oat feed $29.50, sacked.

Cincinnati: Demand poor; trend steady; supply adequate; pulverized white oats $45@52.50.

Louisville: Demand fair; trend steady; supply normal; no changes; reground $26.80, rolled $31.80, feeding $76.80, pulverized $57.30, crimped $44.30, all sacked.

Memphis: Demand poor; trend steady; supply ample; 3½% protein, reground oat feed $24.75.

Minneapolis: Market has eased off on some items, apparently because of supply increases; feeding rolled, feeding oatmeal and pulverized each off $1; rolled $74, sacked; oatmeal $83, sacked; pulverized $41.50, sacked; crimped steady at $59, sacked; reground oat feed steady at $23.

Chicago: Demand improved; trend higher; supply moderate; reground oat feed $16; No. 1 fine ground feeding oatmeal $71; feeding rolled oats $75.

Ft. Worth: Demand slow; supply sufficient; 10% protein oat millfeed $42.20; reground $27.20, sacked.

Philadelphia: Pulverized white, demand slow, supply fair $48.50; domestic, demand slow, supply light $25.80; Canadian oat feed, demand slow, supply light $30.50, sacked, nominal.

OYSTER SHELL

San Francisco: Demand fair; supply ample; local $15, eastern $26, sacked.

Los Angeles: Demand steady; trend unchanged; supply ample; $15.40, sacked.

Cincinnati: Demand fair; trend steady; supply adequate; 80 lb. bags $23.85; 50 lb. bags $24.10, 25 lb. bags $26.35.

Seattle: Demand and trend steady; supply good; eastern $36, delivered carlots, sacked.

Louisville: Demand slow; trend steady; supply good; in 80 lb. paper sacks $23.45, in 50 lb. paper sacks $23.70, in 25 lb. paper sacks $25.95.

Portland: Demand fair; supply ample; trend unchanged; $27@28, sacked.

Boston: Demand and supply steady; in paper $26.05.

PEANUT OIL MEAL

Milwaukee: Demand unchanged; supply fair; trend unchanged; 36% $44 sacked, $40 bulk, both Chicago basis.

PEAT MOSS

Seattle: Demand fair; trend firm; supply good; $2.85 bale, delivered truck lots.

Portland: Demand limited; trend unchanged; supply adequate; $3@3.15 a 5.6 cu. ft. bale.

Chicago: Demand and supply fair; trend firm; standard 7½ cu. ft. bale $3.80.

Cincinnati: Demand and supply good; trend steady; truck loads $3.45 bale, f.o.b. Cincinnati.

San Francisco: Demand and supply fair; $3.65 bale.

Los Angeles: Demand steady; trend unchanged; supply ample; Canadian 5.6 cu. ft. bales $3.65@3.70.

Boston: Demand and supply steady; $3.15 bale in carlots.

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Philadelphia: Demand slow; supply fair; $2.85 bale, f.o.b. pier.

POTASSIUM IODIDE (U.S.P.)

Chittenango, N.Y.: Demand good; trend firm; supply ample; standard blends, 90% KI, 10% stearate or carbonate mixture: 100 lb. drums $1.25½ lb.; 200 lb. and up $1.23½ lb., all delivered.

Cincinnati: Demand good; trend steady; 90% KI in calcium stearate or carbonate mixtures: 250 lb. drums $1.35; 200 lb. in 100 lb. drums $1.35; 100 lb. drums $1.38; 25 lb. drums $1.41, f.o.b. Cincinnati.

POULTRY BY-PRODUCTS

Salisbury, Md.: Meal $77, f.o.b.; demand good, supply ample.

Ft. Worth: Demand good; supply sufficient; 55% protein $79, nominal, sacked, f.o.b. north Texas plants.

Los Angeles: Demand fair; trend steady; supply adequate; $1.25 a unit of protein, sacked.

Boston: Demand fair; supply tight; $70, f.o.b. shipping point.

RICE BY-PRODUCTS

Ft. Worth: Demand good; supply scarce; rice bran $34@36, f.o.b. south Texas rice mills, sacked; hulls $4.50, sacked, f.o.b.

San Francisco: Demand good; supply ample; bran $43, polished $47, both sacked.

Los Angeles: Demand limited; trend steady; supply very limited; California production, high fat content, bran $49@50, sacked.

RIBOFLAVIN

Cincinnati: Trend steady; feed grade (in feed supplements) 4¢ gram in less than ton lots in 3.36 to 16 gm./lb. mixtures; 3¢ in ton lots or more; freight prepaid or paid to destination.

SCREENINGS

Buffalo: Demand fair; trend steady to higher; supply fair to poor; ground, sacked $34.50, New York, lake and rail; unground, bulk $30, New York.

Minneapolis: Prices unchanged from last week: Canadian $21, Duluth; domestic ranges: lights $5@12, mediums $13@20, heavies $21@30; 15% flax screenings $35.

Chicago: Demand and supply fair; trend lower on ground grain; ground grain $32.40 @32.90; Canadian $25.90.

Cincinnati: Demand good; trend steady; supply tight; unground grain screenings $21.50@22.50.

SOFT PHOSPHATE WITH COLLOIDAL CLAY

(Sacked)

Atlanta: $20.40@20.67.
Buffalo: $25.31@25.45.
Chicago: $24.77@24.90.
Cincinnati: $23.47@23.60.
Des Moines: $25.23@25.35.
Kansas City: $24.88@25.
Memphis: $22.20@22.47.
Minneapolis: $25.93@26.06.
Philadelphia: $24.32@24.95.
St. Louis: $24.14@24.27.

SORGHUMS

Ogden: Supply ample; $41@42.

Ft. Worth: Demand fair; offerings light; No. 2 yellow milo $1.86@1.88 cwt., delivered Texas common points.

Seattle: Demand fair; trend easy; supply good; milo $45, delivered carlots.

Los Angeles: Demand steady; trend weaker; supply adequate; milo $3.03½ cwt.

SOYBEAN OIL MEAL

Ogden: Supply good; 41% protein $70@72; 50% protein $74@76.

San Francisco: Demand fair; supply ample; $73.40.

Boston: Demand spotty; supply ample; 44% $47.50@48.50; 50% $51@52, both f.o.b. Decatur.

Seattle: Demand good; trend easy; supply ample; $75, delivered carlots.

Memphis: Demand poor; trend weak; supply ample; prime 44% solvent $54, f.o.b. Memphis.

Ft. Worth: Demand picking up; offerings sufficient; 44%: $61.30, October; $62.30, November-December; 50% $66.80, October; $67.80, November-December.

Omaha: Demand slow; trend steady; supply ample; 44% $53.40, delivered Omaha.

Wichita: Demand good; supply ample; 44% $62, 50% $66, sacked; 44% $59, 50% $65, bulk, f.o.b. Wichita.

Los Angeles: Demand slow; trend weaker; supply ample; $71.90@73.40.

Milwaukee: Demand and supply fair; trend weaker; $50@51, Decatur (depending on territory).

Cincinnati: Demand good; trend lower; supply adequate; $49.50, Decatur.

Louisville: Demand slow; trend easy; supply good; down $2; $50.20, sacked.

Portland: Demand fair; trend down; supply heavy; $71.90.

Kansas City: Demand improved; trend steady; supply ample; 44% solvent process $48@48.50, Decatur.

Minneapolis: New crop production of soybeans denting market, 44% down $3.50 from last week to $44.50, Decatur; 50% solvent off $3.50 to $50.50, Decatur.

Chicago: Soybean oilmeal with ETL billing was adding to its declines of the preceding week, but setbacks registered were on a more moderate scale than during the week just previous; on the other hand, unrestricted billing was firm; Decatur basis, carlots: 44% unrestricted billing $50.50, ETL $47.50; 50% unrestricted $55, ETL $51.50.

St. Louis: Demand fair; trend easy; supply ample; 44% $52.

Philadelphia: Demand and supply fair; 44% $48, Decatur.

Denver: Demand fair; trend firm; supply ample; 44% $52.50.

TANKAGE

Wichita: Demand fair; supply sufficient; 60% $30, sacked, f.o.b. plant.

Cincinnati: Demand fair; trend steady; supply fair; 60% digester $70, Cincinnati.

Chicago: Demand fair; trend steady; supply ample; 60% protein $77.50, sacked.

St. Louis: Demand fair; trend steady; supply adequate; $68.50.

Ft. Worth: Demand fair; supply inadequate; 60% digester $75, sacked, Ft. Worth.

St. Paul: Unchanged from last week; $70 @74, sacked.

Louisville: Demand dull; trend weak; supply good; 60% $70@75, sacked.

Kansas City: Demand fair; trend steady; supply ample; 60% digester $70.

Omaha: Demand and supply good; trend strong; $75.

UREA FEED COMPOUND

Pryor, Okla.: Minimum 42% nitrogen, 262% protein equivalent; $100, f.o.b., bagged; $96, bulk, cars or trucks, freight equalized with nearest producing point.

New York: Minimum 42% nitrogen, 262% protein equivalent, $100, f.o.b., bagged; $96, bulk, cars or trucks, freight equalized with nearest producing point.

Belle, W. Va.: Minimum 42% nitrogen, 262% protein equivalent $100, f.o.b., bagged; $96, bulk, cars or trucks, freight equalized with nearest producing point.

Woodstock, Tenn.: Minimum 42% nitrogen, 262% protein equivalent; $100, bagged, f.o.b., freight equalized with nearest producing plant; bulk $96.

VEGETABLE AND ANIMAL FAT (HYDROLYZED)

Ft. Worth: Demand good; supply limited; 5¢ lb., f.o.b. south Texas area.

VITAMIN E FEED SUPPLEMENT

Cincinnati: Demand good; trend steady; 50 lb. or more $1.40, less than 50 lb. $1.45, freight allowed to destination.

WHEAT GERM MEAL

Buffalo: Demand fair; trend higher; supply fair to poor; commercial grade $82, f.o.b. Buffalo.

Minneapolis: Steady market; $75, jutes.

NEBRASKA

(Continued from page 1)

antibiotic regulations and the food additives amendment."

Inspections

In discussing the method of inspection, Mr. Barnard said that the inspector is required to present his credentials and a written notice of intention to inspect. "He thereafter undertakes a complete inspection of the establishment and the operations being carried out therein. As a general rule, the inspector will be well trained in the problems involved in the manufacture of medicated feeds or premixes. He will have briefed himself on the background of the firm being inspected and will be familiar with such clearances as the firm may or may not have for products being handled. He will not be thoroughly conversant with high level administrative policies in the field of medicated feeds and confusion will often result if management seeks to obtain the answers to difficult policy questions from the inspector. Neither is the inspector qualified to engage in detailed discussions of labels.

"The primary purpose of the inspection is to determine whether clearances have been obtained for the items being produced and whether the terms of the clearances which have been granted are being fully met. Mixing procedures, control practices, raw materials, labels and, in short, all phases of the operation will be checked."

In explaining that an inspector may take samples of feed, Mr. Barnard noted that a feed manufacturer may charge for the feed taken. The inspector will normally furnish a receipt for such samples.

Delaney Clause

In discussing the Delaney Clause in the Food Additive Amendment, Mr. Barnard pointed out that the Secretary of Health, Education and Welfare is "in effect prohibited by law from granting clearances to any food additive (as the term is defined by law) which is carcinogenic, regardless of whether there are residues of the additive present in the finished food. This provision is based on the recognition that no scientific method has been developed by which a safe level of administration of cancer producing substances to man or other animals can be established.

"When scientists can advise administrators as to what are safe tolerances for cancer producing substances in food, it may then be appropriate to urge Congress to consider empowering the secretary to grant such tolerances. However, when we are charged with the duty of saying yes or no with regard to the inclusion or omission of a substance in food when that yes or no depends on assurance that it is safe, we must have that assurance. I doubt that anyone would seriously argue that we should indulge in a guess, however educated," Mr. Barnard concluded.

[For more details on FDA regulations and interpretations, see page 1 of Oct. 1 Feedstuffs.]

Feed Man's View

In outlining the commercial feed man's viewpoint, Mr. Glennon noted that the industry does not oppose imposition of any law or regulation in the interest of public need. He recalled the way in which the industry has cooperated in working out a medicated feed labeling system. He said further that the Food Additives Amendment of 1958 was in the "works" a long time and the feed industry was in accordance with its objectives.

Mr. Glennon said that what he could not agree with is the Delaney Clause which permits use of certain additives by some mills, but not by others. He made the point that either the substances in question are harmful or they are not harmful. And if they are harmful, he said that the government should act to prohibit their use altogether.

"So far as I know," Mr. Glennon continued, "stilbestrol has been proved to be safe at its intended usage level. There is no finding that arsenicals cause cancer."

As to what the feed industry should do about the FDA restrictions, Mr. Glennon suggested that it would be better to solve the problems without legislation. But he noted that the industry has problems that have to be ironed out at all levels of the administration — the Department of Health, Education and Welfare, the Food and Drug Administration and FDA inspectors.

Turning to inspections, Mr. Glennon told the feed men that there is a good chance their mills will be inspected. "When you are, you should have a top management man accompany the inspector and cooperate courteously and fully."

Two Alternatives

Pinch-hitting for Dr. Catron, Dr. Ackerson spoke on the topic of "The Delaney Clause and Research on Food Additives." He said there are two alternatives to the present impasse as far as feed additives are concerned: (1) Amend the legislation now on the book, or (2) prove each additive to be entirely innocuous or without detrimental effects at the level administered, or at levels likely to be used if a mixing error occurs.

Dr. Ackerson noted that legislation is not possible, at least for several months, leaving only the research avenue open at present. He said that in 1957-58 half of all research was carried on at colleges and universities; about one third by industry,

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- FEEDPHOS (Defluorinated Phosphate)
- C.P.S. (Corn Fermentation Solubles)
- CLINTON Corn Gluten Meal-Feed
- HaVaN Granite Grit
- TAPO Oyster Shell & Meal
- KELL PHOS (Colloidal Phosphate)
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TOP OF THE HOPPER

(Continued from page 2)

provide a full-time job for a farm worker in Indiana, according to Purdue University agricultural economists. This was nearly six times as much as was required 20 years ago.

♥ ♥

PIERRE D. MARTINEAU, director of research and marketing for the Chicago Tribune, gave participants at the recent Feed Marketing Seminar a strong pep talk on the importance of brand promotion in selling products of all kinds. "Your problem," he said, "is in trying to glamorize a conversion product rather than a consumer product." He suggested that this can be done and cited Container Corp. as a packaging company that through advertising had established itself as a design company. Similar results have been obtained by aluminum companies. He told the feed sales bosses that "you must give your products a positive and distinctive image—otherwise you are a nameless and faceless company."

13% by the federal government and 7% by other non-profit organizations. These agencies spent about $835 million of which the federal government picked up the tab for a trifle over half, industry one third and colleges, universities and other non-profit organizations the rest.

Risk Capital Unwilling

"When we examine trends in the feed industry today it is apparent that a large segment of risk capital is unwilling to sponsor research aimed at developing new drugs, antibiotics and feed additives and then discover their products need further extensive testing prior to approval for the feed trade," Dr. Ackerson said.

The Nebraska professor noted that a number of important groups had recommended revision of the Delaney Clause and had suggested the expansion of federal and state research facilities to conduct basic research aimed at discovering additional safe and effective materials for the production and processing of feeds, or research aimed at minimizing chemical residues.

As to the future, Dr. Ackerson said: "It is evident that relief must be found in research on additives on which suspicion has already fallen, plus new basic research to sort out those compounds, as yet untried, which will be both effective and safe. This may well be done by the state experiment stations as they can respond more readily to demands for this type of work."

(Summaries of other Nebraska conference talks will appear in a subsequent issue of Feedstuffs.)

REGULATIONS

(Continued from page 1)

vice on criteria, procedures and policies."

The committee also recommended that the enforcement provisions of the Food and Drug Act be strengthened, that the drug agency be given much higher appropriations and that a single agency be made responsible for drug advertising and promotion.

All of the committee's recommendations would require additional legislation.

COMMENT

(Continued from page 4)

kind per acre from Commodity Credit Corporation stocks.

Mr. Nixon says that such a program will obtain results without any further budget drains on the U.S. treasury.

It must be suspected that the Kennedy program can only contemplate Brannan Plan payments for farm crops, between the market price and his income parity payment levels for the basic crops at least, which would mean substantial retail price advances.

The information available to this reporter was only assembled on the eve of the day when Mr. Kennedy explained his farm program at Guthrie, S.D. At that time, he could have only been working on broad assumptions. It seems that in a recent speech to farmers in Iowa, he said, in part, that he advocated a full income parity payment for farm crops—unidentified, nevertheless—on the basis of income parity for those crops.

Sen. Kennedy would reach this goal through many virtues under a "supply-management" operation. It might readily include Brannan Plan-type payments for livestock and swine. Who knows? Mr. Kennedy has not specified his technique.

Nixon Plan

On the other hand, an equally unspecific Mr. Nixon suggests a big cutback in production through an expanded soil bank and a vigorous food-for-peace program, plus other overseas disbursements or deliveries.

Some feel that neither plan makes good sense.

It had been predicted in Feedstuffs many weeks ago that neither presidential candidate would express more than cursory farm plans to the farm belt this year.

It seems that this prediction is being borne out.

CORN

(Continued from page 1)

eral years when this country's production was right around the 3-billion-bushel figure.

In 1959, we raised 4,361,170,000 bu. and according to both the U.S. Crop Reporting Board's September estimate (where we have a 4,182,467,000 bu. production in sight) and Galvin's estimate that came out this week, as of Oct. 1 at 4,199,000,000 bu., we are going to be mighty close to the 4.2-billion-bushel mark this year.

Of course, one of the main reasons for a situation in which 4-billion-bushel crops of corn become an expectation rather than an exception, lies in the lifting of all government acreage restrictions. In 1958, the last year when there were so-called acreage "allotments" on this cereal, the harvested acreage was only 73,337,000. Last year, it was boosted to 84,609,000 and for 1960, there was a reduction of close to a million acres, largely accounted for by a switch to soybeans, but nevertheless, still leaving a neat 83,680,000 acres of corn for harvest this fall or fully 10 million acres more than two years ago.

Then, in addition to the step-up in the matter of acreage during the past 10 years, there has been a most phenomenal increase in the yield per acre. Mr. Galvin has just predicted a 1960 yield of 50.2 bu. to the acre; last year it reached 51.5 bu., both of which make comparisons with the 10-year average of only 41.6 bu. a wasteful exercise in arithmetic.

"When Will It Halt?"

Where and when a halt will be called to the building-up of such astronomical carryovers of corn is a highly moot question. A year ago, at the close of the 1958 corn crop year and before a bushel of the 4,361-million-bushel crop grown in 1959 had been husked and marketed, there were still 1,530,437,000 bu. left over from 1958 and crops back to 1951. Some idea of what such a carryover means can be gleaned from the fact that this was three times more than the amount of corn that comes to market as grain in any one year.

And now we have the carryover as of Oct. 1, 1960, to reckon with—the official figure will not be available until Oct. 25, but it is conservative to estimate it at least 1,850,000,000 bu. By the time a good slice of the crop now being picked finds its eventual way Oct. 1, 1961, into the ever-mounting carryover, the "ever-normal" granary of early New Deal vintage will have truly become the "abnormal granary."

Galvin Comments

Commenting on the fact that he boosted his own previous corn crop estimate by 44 million bushels and even went over the Sept. 1 official guess by some 17 million bushels, Mr. Galvin said in part:

"The corn crop has turned out exceptionally well considering the late planting in many areas, together with dry weather and exceptionally high temperatures during the growing season. Recent weather has been favorable for maturing the crop and, as of this date, only a very small percentage in the main Corn Belt states would be damaged by frost. The modest upward revision was mainly in central states other than Illinois and Missouri, where reductions occurred."

PRICES

(Continued from page 8)

are now sliding away from the mid-August average of 16.6¢ lb., which was a penny higher than a year earlier.

USDA says the count of broilers now growing is about 5% larger than last year.

Turkey Output Leveling Off

Recent turkey slaughter has been running about 25% (by weight) above a year earlier, but October and November slaughter is likely to be at or below the year-ago level, at least partly the result of reductions from last year in April-June hatches.

This year's turkey crop—82 million birds—equals last year's record, but the seasonal distribution, and the distribution among breeds, is different from 1959. A 37% cut this year in Beltsville-type turkeys is offset by an increase in heavy-breed turkeys, with a consequent increase in the total tonnage.

USDA says it is unlikely that the unusually sharp run-up of 7¢ lb. between mid-October and mid-December of last year will be repeated in 1960.

Broiler Credit Down In Southern States

ATLANTA—Loans held by banks and by selected feed manufacturers for broiler production dipped further during August in the commercial broiler producing areas of Alabama, Florida, Georgia, Louisiana, Mississippi and Tennessee.

The research department of the Federal Reserve Bank of Atlanta reported this week that trade credit outstanding Aug. 31 at reporting feed manufacturing plants was less than that recorded a month earlier and a year earlier.

Also, bank credit for broiler production was further reduced during August in the sixth federal reserve district served by the Atlanta bank. New loans showed a sharp reduction.

Although repayments declined, the drop was less severe. Outstandings of broiler production loans at the end of August, therefore, were down significantly and the cutback in bank credit which began in March, 1960, was further extended.

Researchers of the Atlanta bank said feed dealers "suffered the proportionately larger curtailment in outstandings of broiler production paper at reporting banks; the volume of new loans to dealers shrank while repayments by them rose."

BUSINESS

(Continued from page 1)

advance this week; the top was near $18.50 cwt., only 50¢ under the high reached in late 1958. This situation has had much to do with heavier feeding to get hogs to market to take advantage of good prices.

Demand from feed manufacturers for ingredients picked up considerably this week. But there was a soft spot in the over-all picture. Soybean meal prices sagged because of soybean supplies increased by new crop production. Tempering this decline, however, is Galvin's Oct. 1 report which estimated the 1960 crop somewhat under the U.S. Department of Agriculture's Sept. 1 forecast.

Millfeeds bottomed out and up during the week. At Buffalo, distress supplies resulting from recent railroad and elevator strikes there have been pretty well alleviated, but some nearby supplies were available.

Feed manufacturers were reported to be in the market to build up inventories because millfeeds were still considered cheap.

Feed Survey Group To Convene Oct. 27-28

CHICAGO — "To forecast a year ahead the use and supplies of all types of feeds, exclusive of roughage and pasture" is the purpose of assembling 24 outstanding college men in Chicago by the American Feed Manufacturers Assn. later this month.

So stated Oakley M. Ray, director of market research for AFMA, in announcing membership of the 1960 Feed Survey Committee. Members of the group were selected from the nation's land-grant colleges to represent all areas of the country. They will convene for an intensive two-day meeting, Oct. 27-28, 1960, summarize the national feed supply situation, and then divide into sub-committees to develop specific forecasts on numbers of each type of livestock and poultry to be raised as well as their likely feed consumption.

College Feed Survey Committees have been called together annually by AFMA since 1942. According to Mr. Ray, "their forecasts of total feed consumption have been unusually accurate, and have provided a reliable business yardstick for those in the livestock and poultry industry management."

Chairman of the current committee is Dr. A. D. Weber, dean of agriculture at Kansas State University. Assisting him will be two advisors-at-large: Dr. C. W. Upp, director, Agricultural Experiment Station, Louisiana State University, and Dr. Roy M. Kottman, dean of agriculture at Ohio State University.

● A sub-committee on swine forecasts includes: Dr. J. A. Hoefer, Michigan State University (chairman); Dr. D. E. Becker, University of Illinois; Dr. E. R. Kiehl, University of Missouri; Dr. H. S. Teague, Ohio State University, and Dr. R. C. Wahlstrom, South Dakota State College.

● A sub-committee on dairy forecasts includes: Prof. P. M. Reaves, Virginia Polytechnic Institute (chairman); Dr. T. H. Blosser, Washington State University; Dr. L. C. Cunningham, Cornell University; Dr. R. P. Niedermeier, University of Wisconsin, and Dr. D. M. Seath, University of Kentucky.

● A sub-committee on poultry forecasts includes: Dr. J. C. Driggers, University of Georgia (chairman); Dr. D. F. Fienup, University of Minnesota; Prof. D. C. Henderson, University of Vermont; Dr. F. W. Hill, University of California; Dr. J. H. Quisenberry, Texas A&M College, and Dr. E. L. Stephenson, University of Arkansas.

● A sub-committee on beef and sheep forecasts includes: Dr. J. O. Dunbar, Purdue University (chairman); Dr. J. K. Matsushima, University of Nebraska; Dr. J. I. Miller, Cornell University; Dr. A. L. Neumann, University of Illinois, and Dr. L. S. Pope, Oklahoma State University.

MARYLAND

(Continued from page 6)

correlation of + .30 for cuts and tears down to + .02 for diseased birds.

Average percentage of each important defect in a number of 100 bird samples studied were as follows: Procurement bruises, 15.0%; breast blisters, 6.5%; fleshing, 5.9%; misbled and discolorations, 4.5%; weight, 3.7%, and bloody wings, 3.4%.

Other factors observed ranged from 2.7% for barking down to 0.2% for procurement broken wings.

Further studies will be made to form a basis for recommended improvements to reduce the causes of undergrades for broilers.

COMPARATIVE PERFORMANCE OF LOCALLY PRODUCED VS. SHIPPED HATCHING EGGS— Charles C. Marker, Dover, Del., re-

Chicks Placed in Principal Broiler Areas

(000's omitted)

Week ending	Maine	Conn.	Penn.	Ind.	Ill.	Mo.	Del.	Md.
July 30	1,114	438	788	749	84	787	1,785	2,212
August 6	1,132	497	796	773	99	719	1,667	2,109
August 13	1,175	412	721	672	92	750	1,607	2,071
August 20	1,117	422	705	664	104	679	1,740	1,757
August 27	1,091	441	688	645	97	625	1,728	1,858
September 3	1,073	353	798	588	92	627	1,741	1,825
September 10	1,046	400	667	654	104	719	1,573	1,995
September 17	676	353	600	588	118	603	1,572	1,973
September 24	1,038	473	695	619	129	658	1,442	1,894
October 1	1,068	433	529	581	102	615	1,552	1,903

Week ending	Va.	W. Va.	N.C.	S.C.	Ga.	Fla.	Ala.	Miss.
July 30	1,303	508	3,077	296	6,640	198	3,659	2,191
Aug. 6	1,123	478	3,095	333	6,231	199	3,518	2,183
Aug. 13	1,095	453	3,080	351	6,196	294	3,391	2,059
August 20	1,052	457	2,954	364	5,940	283	3,298	2,112
August 27	931	407	2,850	331	5,969	288	3,176	2,032
September 3	817	413	2,838	302	5,972	245	3,232	1,994
September 10	784	420	2,693	300	5,960	206	3,000	2,022
September 17	790	363	2,717	297	6,139	185	3,115	2,009
September 24	778	313	2,645	297	5,961	200	3,107	1,944
October 1	678	423	2,844	303	5,946	202	3,085	1,880

Week ending	Ark.	La.	Texas	Wash.	Oregon	Calif.	Total 22 areas 1960	1959
July 30	3,642	433	2,126	309	228	985	33,552	32,044
August 6	3,714	350	2,037	302	253	1,095	32,093	31,302
August 13	3,509	343	1,876	276	218	1,054	31,693	31,136
August 20	3,478	383	1,912	318	228	886	30,853	30,402
August 27	3,321	351	1,760	327	183	944	30,070	29,236
September 3	3,104	356	1,703	298	191	961	29,523	27,913
September 10	3,035	354	1,611	233	219	1,020	29,037	26,268
September 17	3,073	334	1,583	242	192	928	28,442	24,682
September 24	2,905	325	1,658	242	218	1,006	28,491	24,573
October 1	2,893	356	1,623	216	195	1,109	28,536	24,612

viewed the hatching egg history of the Delmarva broiler industry, pointing out his experiences and studies of the finance and economics of egg supplies for this industry by bankers and others.

He said that price competition favoring cheap labor almost invariably results in a lower quality product due to ignorance of the basic essentials in producing at a lower cost. This holds true in hatching eggs as his studies over a period of years show that local eggs give an advantage in hatchability of 5-8% over shipped eggs, aside from the added costs of transportation of shipped eggs. He pointed out that freight alone would cost him $456 a week for eggs to fill his incubators, and if all eggs set in Delmarva the week of May 14, 1960, were shipped in the freight bill would have been $24,608 or over $1¼ million a year.

Further records on broiler flocks hatched from locally produced vs. shipped eggs show, on the average, a better performance record for locally produced eggs in the hands of growers, he said.

That local production of hatching eggs, when under direction of sound supervision, is good business is attested by the fact that local banks are financing construction of houses for hatching egg production in the Dover, Del., area, he said. Other areas on the Peninsula that are not so heavily populated with broilers also offer good possibilities for hatching egg production. But, he added, if the producer is not willing to devote 365 days a year to the business, he had best cast his lot elsewhere, where his failures may be less costly.

ENVIRONMENTAL FACTORS IN BROILER MANAGEMENT—Pointing out the importance of proper and adequate ventilation and temperatures in management of broiler flocks, James L. Nicholson of the University of Maryland Substation, Salisbury, cited a survey of service men which indicated that getting growers to ventilate houses properly was a major problem.

Service men use a tell-show-and demand type approach in most of their grower relations and this usually results in improvement. This approach involves such things as measurements of houses, feeder and fountain space, etc., to guide procedure in space allowance per bird, and types of feeders, etc.

To secure adequate information on ventilation and temperatures, use of a chart requiring entries of the house temperature at 8 a.m., noon and 6 p.m. and the high and low for the 24-hour period is very helpful to a service man, especially for weekend or holiday periods when the factors of ventilation and temperature are most apt to be neglected by growers. Mr. Nicholson pointed out that maximum and minimum thermometers located at one or more representative spots in each house with a chart for entering the data should be helpful for the service man to know of house conditions in his absence.

A NEW LOOK AT FEEDING PRACTICES—Dr. G. F. Combs, University of Maryland nutritionist, pointed out that differences in feeding methods for poultry are much less important than the actual amounts of the essential nutrients they consume. "However, service men should well know the nutritional limitations of the feeds being employed and be prepared to direct their feeding in a manner to utilize them best."

All-mash feeds are gaining in favor, he pointed out. However, any feed must be: (1) Properly made for its objective, (2) feeding management suited to it, and (3) the feeder must be skilled and adequately motivated to follow recommendations for the particular feed used.

Restrictions of heavy breed layers in energy consumption look very promising to prevent obesity and mortality in broiler strains, he said. However, rations suboptimal in protein have often led to genetic selection of broiler strains that over-eat in energy to secure adequate protein. This results in fat birds. Quantitative restriction, therefore, appears to be the soundedst approach to restrictive feeding.

Pointing to cannibalism, Dr. Combs stated that many factors may contribute to this problem, but suboptimal levels of proteins (amino acids) and minerals are known to cause feather eating and other forms of cannibalism. Debeaking may effectively control this problem, but this should not eliminate concern for the real causes of it.

Calcium levels for layers are now being re-evaluated. Calcium levels set by National Research Council may not be adequate for hens in high production as measured in terms of shell quality. Since 2¼ times as much calcium should be present in the feed as is excreted in the eggs, and since a dozen 2-oz. eggs contain 24 gm. of calcium, approximate requirements of calcium for any given flock can be determined by the formula:

$$\% \text{ Calcium in feed} = \frac{12}{\text{lb. feed consumed/doz. eggs laid}}$$

Low calcium levels have also been shown to markedly potentiate action of antibiotics used for controlling certain diseases, Dr. Combs pointed out.

Cracked corn for first feed for chicks is used by some feeders. This may be okay if not used beyond the first day, but no advantage appears to come from it except where adequate brooder temperatures are not maintained, he said. Chicks should be placed in the brooder and fed immediately, he recommended.

"Insoluble grit can be expected to improve feed utilization where grain or coarse fibrous feeds are fed," Dr. Combs said. "However, where finely ground, low fiber feed is employed, little return for its use can be expected."

Supplementation of turkey feeds with zinc has proven its practical worth in preventing enlarged hocks and improving feed efficiency. The value of zinc supplementation for broiler feeds and caged layers has not been clearly established.

The "fish factor" is the only unidentified growth factor yet demonstrated, though four factors have been postulated by researchers, it was pointed out.

Hemorrhagic disease in broilers has apparently responded to vitamin K treatment in some cases. However, in many cases, no results were obtained. Where sulfa drugs are used, vitamin K (in alfalfa) or stabilized menadione sodium sulfite might be of value, he said.

Addition of vitamin C to diets of laying hens has not yet been clearly shown to increase shell thickness of their eggs. Further work is needed to evaulate the role of added vitamin C to laying rations.

Use of tranquilizers to reduce effects of stress due to heat shows interesting possibilities, but present information is too scarce to appraise their value and place.

Where less than 0.25% of salt is added to broiler feeds, suboptimal salt intake may result. When salt-containing ingredients such as fish meal are reduced, water intake may be too low and dehydration and pinkish-colored shanks may result.

Water, the most important single nutrient, is easy to overlook since many take it for granted, Dr. Combs stated.

Feed waste is still one of the big sources of loss to poultry producers, and even with pelleted feeds losses result where feeders are filled too full. Feed waste is still an important direct challenge to service men, Dr. Combs said.

FDA REGULATIONS—Dr. Charles E. Durbin, chief, veterinary division of the U.S. Food and Drug Administration, pointed out there are 50-60 drugs now listed in Feed Control Officials publication as being used in various animal feeds.

Formerly, the marketing and use of these drugs were permitted until their use was proven by FDA to be detrimental. Now the manufacturer must withhold any new drug product from the market, until it has been approved for sale by the administration.

A modification of the Delany Amendment to the Food and Drug Laws has been requested by FDA to exempt any product from its provisions which, when used in animal feeds, leaves no residues either in the animal after slaughter or in any food product of the living animal.

It is the policy of the administration that any product used shall have no adverse effect on the human consumer of any resulting products.

"It is of paramount importance that service men impress upon producers and others to carefully read labels and directions, and use the drugs, additives, etc., at recommended levels and in the manner described by the manufacturer," he stressed.

Arsenicals have a place as growth promoters for poultry and other animals but must be used in accordance with directions.

Pure hormones as such are not used on animals, but hormone-like substances, such as diethylstilbestrol, have not been yet shown to leave residues in beef that are harmful to humans as has been shown in poultry meat.

Antibiotics, particularly penicillin, when used carelessly is causing trouble in milk quality control circles and is now under close scrutiny. This again points up the importance of careful use of all of these products, it was stated.

Coccidiostats in certain forms may leave effects in chickens that may be undesirable or harmful as human food, despite their value as a coccidiostatic drug. Again, the use of coccidiostats approved by the administration and used in accordance with manufacturers' recommendations is of paramount importance, he concluded.

QUESTIONS ANSWERED—During the "Stump the Experts" panel moderated by Conway Robinson, director of agricultural programs for WBAL-TV, Baltimore, it was said in response to questions, by:

Dr. G. F. Combs: 1. Insoluble grit is of minor importance in the ration of growing replacement birds, except where grain or a coarse, fibrous ration is fed.

2. Increased calcium levels in rations for heavy laying hens in accordance with formula given above should improve egg shell thickness where this is a problem.

3. Laying rations may well be tailored to the different seasons of the year as temperature changes and production levels do modify the optimal levels of energy, minerals and other factors affecting best returns.

4. Feeding corn only to broilers for last five days prior to moving will produce some extra fat, but then a sudden change from the regular ration may reduce feed intake, thus halting weight gains on the regular rations.

Dr. R. W. Winterfield: 1. Bronchitis and Newcastle vaccines of high potency do not interfere with each other when given in water or spray method. However, a more uniform dosage and immunity can be secured when they are given by the vent drop method.

2. There may be little difference in the immunity produced when Bronchitis vaccine is administered by the vent or respiratory tract. However, the vent method has produced less "breaks" with our strains or high potency vaccines than the respiratory method of administration.

Dr. I. M. Moulthrop: Leucosis may be transmitted through the eggs to resulting chicks or bird to bird contact. Stock free of the virus and breeding for resistance to the disease offers best chances for control. Debeaking is best remedy for controlling cannibalism, but the basic reasons for causing it should be found and corrected if possible.

James L. Nicholson: Broilers give best performance at 60-70° F. after 5 weeks of age; prior to 5 weeks higher temperatures with 90° F. to start are indicated from studies. Reliable maximum and minimum thermometers for broiler houses can be secured from most instrument manufacturers at a cost of $7-10 each.

Dr. N. V. Helbacka: Studies are now underway to point out methods of improved handling of live broilers to reduce bruising in handling. These improvements must and will come, but we are not yet ready to make specific recommendations.

Charles E. Marker: Those who have any data on the subject in Delmarva will tell you that locally produced eggs hatch 5-8% higher than shipped eggs, aside from the shipping costs saved.

A. V. Krewatch: A dairyman should have 50 or more cows to justify investment in a mechanized materials handling unit. Of course, the larger the herd the better justification of the investment. This means careful estimates of each individual case, of course, though elimination of heavy and unpleasant labor tasks is also to be considered.

(Developments in the beef and dairy cattle and swine fields reported on at the conference will be covered in future issues of Feedstuffs.)

MARKETS

(Continued from page 2)

farmers in the area are devoting most of their time to combining soybeans. Harvesting is being rushed, despite some delays due to showers. Few beans are going into storage; most are being sold. Feed manufacturers express the hope that some of the cash received will soon find its way into the hands of the feed suppliers and ease the credit situation.

Despite some disappointment over the present rate of business, the outlook is considered promising. Hog marketings have dipped, September farrowings were up from those of a year ago and average farm prices lifted by sharp increases in dairy products and eggs.

Ohio Valley

Steadily improving business was reported this week by most formula feed manufacturers. Several noted a greater volume of orders in hand than at any time during the last month or more. This happy situation was ascribed to the drying up of pasturage and the resultant increased use of mixed feeds, especially for poultry and hogs.

Another favorable factor in the improving situation is the continuing strong consumer demand for eggs and poultry, with grade A jumbo eggs now fetching 60¢ doz. at retail, compared with 48¢ doz. a month earlier, and with lower grade eggs proportionately higher in price. While there have not been corresponding increases recently in poultry prices, the retail demand has been sufficiently active to keep the market stable.

In view of this satisfactory situation and outlook, area feed manufacturers and ingredient suppliers currently are feeling more optimistic about their future business activities than at any time since last spring. They express confidence that, despite the expected bumper fall crops, business during the coming winter months will be well in excess of that recorded a year earlier.

Pacific Northwest

Oregon, Washington and Idaho feed mixers reported that their sales volume was very good this week, with many of them apparently pleased with present tonnage. Some Portland area mixers felt that the present low price for broilers was being felt by this area's trade.

Mixers and jobbers currently prefer to place orders to cover only necessary requirements for short periods since they are being practically assured of an even supply of principal feed ingredients.

Feeders, jobbers and mixers continue to hold millfeed orders to a bare tonnage minimum in the hope that export flour sales would soon enlarge to the extent that lower prices would result. However, there was no assurance that a production step-up would take place and most mills held onto their stocks in a firm manner.

Copra meal prices took the sharpest cut this week when they closed around $5 ton lower. Soybean meal prices were off $3.50 ton, while suncured alfalfa meal gained $3 ton.

Mountain States

Feed business has not yet picked up at this time of year according to the usual pattern because cattle feeding has not gained much momentum.

Dealers report business increasing, but not at the normal rate. They attribute this condition to the uncertainty of cattle feeders as to what they will do with their feeder cattle.

Poultry feeding is about normal. Feed supplies are plentiful, but the weather has been hot and dry and dealers are expecting to supply feed for more cattle than last year due to the drying up of the ranges.

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Investment Co., Jasper, Ala., $21,817.14; Wachovia Bank & Trust Co., Charlotte, N.C., $136,790.16; Morris Unsell, Dangerfield, Texas, $5,888; Treadwell, Fincher & Guthrie, Dalton, Ga., $14,263.74; Timberland-Thompson, Inc., Gainesville, $3,030.15; Thermal Belt Pullet Farm Inc., Gainesville, $6,573.40; Sidney O. Smith, Inc., Gainesville, $23,424.14.

Shady Lane Feed Store, Damascus, Va., $2,212.50; S&W Milling Co., Fremont, N.C., $1,431.30; S&S Milling Co., Hemingway, S.C., $10,083.10; Royal Bank of Canada, Brampton, Ontario, Canada, $14,340; Richardson Farm Supply, Mt. Pleasant, Texas, $3,009; Ralston Purina Co., St. Louis, $549,377.36 less amount due Gainesville Hatchery, Inc., Chemell's Hatchery, Inc., and various corporations; Polk County Farms, Inc., Gainesville, $6,573.40; Pioneer Bank, Stamford, Conn., $10,283.53; Mooreville (N.C.) F.C.X., $1,170; Lindsey Poultry & Egg Co., Lumberton, N.C., $11,613.32; Jonesboro Roller Mills, Jonesboro, Ark., $1,113.75; Internal Revenue Service, Atlanta, $9,828.28; Gaffney Feed & Supply Co., $3.759.35; Flowood Corp., Jackson, Miss., $72,649; Farm Service & Supply, Florence, Ala., $1,324.50; Edwards & Walker, Inc., Gainesville, $1,266.34; Frank Delong, Sr., Gainesville, $2,422.80.

Cowan Farm Supply, Tryon, N.C., $2,245.20; Grady and Paul Conley, Blairsville, Ga., $1,061.50; Chick Supplies, Inc., Gainesville, $10,872.61; Richard Brumby, St. Paul, Minn., $2,511.60; W. C. Blount, Midway, Ala., $1,290; Barker & McMillan Hatchery, Gainesville, $6,736.80; Barker Bros. Feed & Poultry, Flowery Branch, Ga., $7,090.20; Baldwin County Feed Co., Robertsdale, Ala., $7,813.50; F. L. Bailey, Marion, Ala., $10,844.37; B&W Milling Co., Marion, S.C., $2,476.40; Anderson Box Co., Indianapolis, Ind., $8,510.16, and Airmarine Leasing Corp., Atlanta, $8,165.64.

Marketing Change by Strong-Scott Told

MINNEAPOLIS—A change in the Strong-Scott Manufacturing Co. marketing structure for grain and feed equipment has been announced by L. S. Strong, president.

The area of Kansas, Nebraska, Colorado, Missouri and Arkansas, formerly represented by the equipment division of Archer-Daniels-Midland Co., Kansas City, will now be served through a branch sales office of Strong-Scott.

The new office has been established at 1137 Board of Trade Building, Kansas City, Mo., and will be under the supervision of a direct representative of the firm, according to Mr. Strong.

Both Losses and Gains In Memphis Oil Meals

MEMPHIS, TENN.—Prices of oilseed meal futures were irregular on the Memphis Board of Trade the past week, compared with a week earlier.

The only gains were in unrestricted soybean oil meal for January and forward months.

Losses reportedly resulted from slow cash oil meal dealings, both cottonseed oil meal and soybean oil meal. Manufactured feed business was said to be very spotty, and in numerous areas it was termed poor. However, the trade anticipates better feeding conditions with cooler weather developing and that could influence a rise in the oil meal market.

Nearby October reflected the largest decline in unrestricted soybean oil meal, Eastern Trunk Line soybean oil meal, and bulk cottonseed oil meal.

Trading volume for the week totaled 5,500 tons of unrestricted soybean oil meal and 300 tons of bulk solvent cottonseed oil meal.

Eastern Trunk Line soybean oil meal closed Oct. 4 $1@2 ton lower than on Sept. 27, unrestricted soybean oil meal 80¢ lower to 85¢ higher and bulk solvent cottonseed oil meal 50¢@$1.50 lower.

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